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MULTI LAYERED LANDSCAPE: ADD-ONS TO THE POST-INDUSTRIAL URBAN LANDSCAPE OF NYHAMNEN

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ABSTRACT

Our climate is changing and we are facing stormier weathers and larger fluctuations in sea water levels, and in addition there is a need to reduce our carbon dioxide emissions. To be able to cope with these forces of nature in a sustainable way we need to rethink our use and distribution of resources.

This project sets out to find ways on how to deal with a multi layered landscape where the ground level is occasionally inaccessible. It's investigating the dynamics of space between very flexible structures such as houseboats and floating docks, and very fixed structures such as former industrial buildings and quays. It's also about the tension in time between temporary installations and interventions on the one hand, and the persistence of larger firm structures on the other.

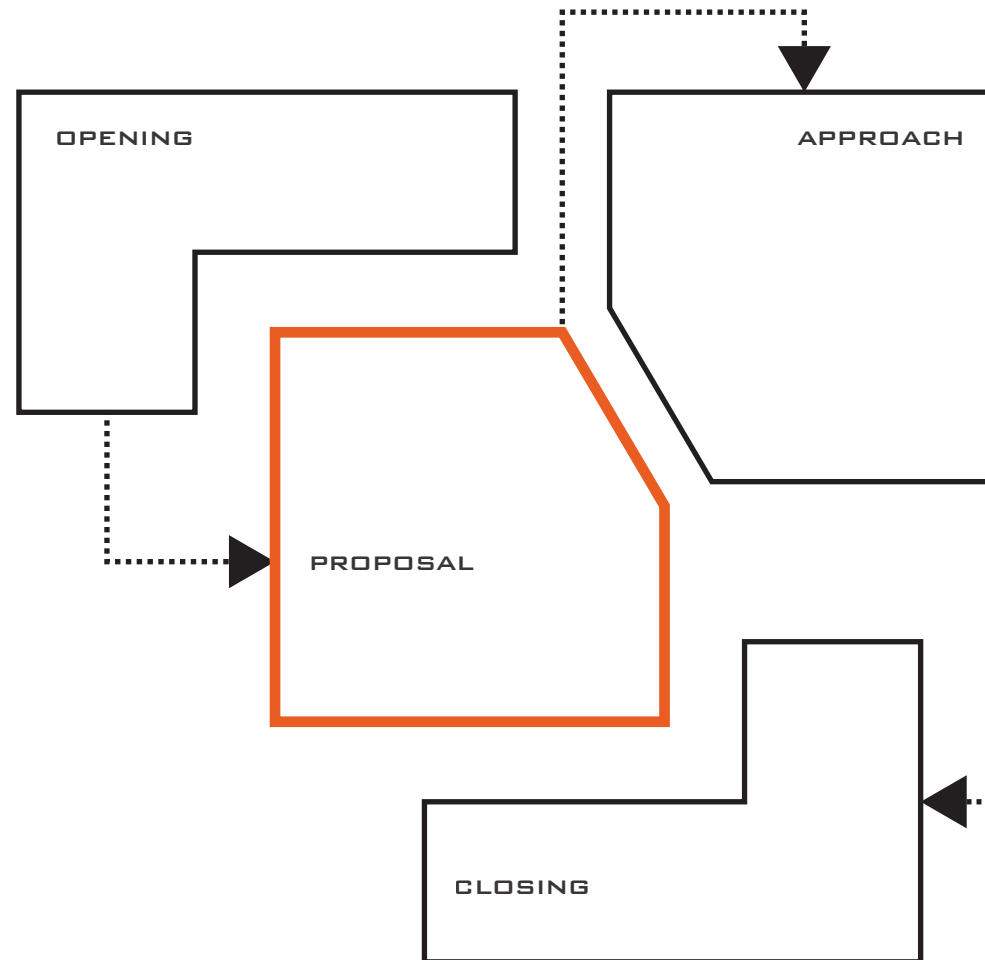
The site of the project's design proposal is located in a former harbour area in the northern part of Malmö in the south of Sweden, and comprises several structures of high cultural values which I believe should be accounted for when redeveloping the area. An issue to deal with is how worn but valuable cultural heritage

buildings can be repurposed when merging with the expanding city core. Another is how already existing, decaying buildings can function together with, and be revitalized by new systems and structures. The site I've been working with is called Hullkajen, which is a quay stretch along the water in Nyhamnen just north of Malmö Central Station.

My theoretical apparatus starts off with the concepts *repurpose* and *radical increments* (GUFF & SHERMAN 2011) (GUFF & DAHL 2015). These two concepts set the framework for this project and deals mainly with additions to, and reprogramming of already existing structures. To further unravel these broader concepts, I've worked with the theory of *difference transformation*, *continuity transformation* and *cultivation transformation* (BRAAE 2015). These theories all focus on analysing and categorizing occurrences in post-industrial landscapes, but they all relates to time quite differently. To concretise these concepts and theories that relates to transformation in both time and space I elaborate further by means of the strategies *add-ons*, *superuse* and *pop-ups*.

Methodologically I've been working with *design research* (FRASER 2013). This open ended approach to knowledge generation I've divided into two categories; *on site* methods and *in studio* methods. On site methods constitutes approaches such as observations, sketching, photographing, filming and discovering; while in studio methods constitutes reading, writing, watching, sketching and modelling. These two subdivisions have been alternated throughout this project, initially with an emphasis on the on site methods and later on more emphasised on the in studio methods.

In conclusion I believe radical increments and multi layeredness could be key instruments when re-designing post-industrial areas. Shifting the focus from the exposed ground level to interconnected higher ones both takes weight of the not always accessible ground, and makes use of the new surfaces on top of build structures. Through the concept of repurpose valuable cultural heritage can be cared for and transformed into something that meet the needs of today.



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BACKGROUND

OPEN

This master project is in a sense a continuation of two of my previous projects which both had Nyhamnen in Malmö as project area. During the previous semester I worked with Nyhamnen as site within the two courses; *Planning Project - Driving Forces and Contemporary Tendencies* at SLU in Alnarp and *Advanced Architectural Design I* at LTH in Lund.

The design project at SLU was aimed at creating a program for how Nyhamnen can be transformed in the nearest future, with an agile approach towards the constant changes in urban dynamics. The course dealt with the transformation of Nyhamnen in a broad sense; *who should design Nyhamnen for whom? How can we have an agile and resilient approach when time and processes are in constant flux?*

The course at LTH was a part of a parallel commission initiated by Malmö municipality. This time the objective was to produce a development plan for how the area -

in a more detailed and applied way - can function in the future. The main question was; *how can Nyhamnen become a dense, green and sustainable living environment while at the same time be economically and practically feasible?*

In this master thesis I've zoomed even further into a particular site in the north-western part of Nyhamnen. I have been focusing on a few blocks and their configuration while also considering connectivity to the surroundings, micro climate on site, adaptation to a changing climate with sea level rises and more extreme weather conditions, together with the ambition of resource efficiency.

I'm looking at the site as a dynamic system comprised of mega-structures in a multi layered landscape. The structure is being explored - from high to low, from flexible to firm, from tempered to non-tempered. My design could be seen as a prototype, or even a model to be used in similar contexts or projects.

The most basic objective of this thesis is exploration. About exploring the design research process, about exploring the site per se and about exploring my own abilities to elaborate and work spatial, and now in retrospect I must also add theoretically.

Though the site at Hullkajen is very flat, the landscape is most intriguing and there is a multiplicity of horizontal layers to acknowledge. The three main levels of these layers that are elaborated on in this proposal are;

The one at the bottom of the basin, which virtually always is covered with water, the **[SUB LEVEL]**;

The one at the quay's ground level, which mostly is above sea level, the **[GROUND LEVEL]**;

The one at approximately seven meters' height, which most likely will stay above sea levels in the foreseeable future and already exists today in many of the existing structures, the **[ELEVATED LEVEL]**.

OBJECTIVES

The aim with this thesis is to through design research explore what happens to a space that is not always accessible due to fluctuating water levels, and to develop a conceptual design proposal that take these fluctuations into consideration.

My intentions are to orient myself among theories within the fields of landscape architecture, building architecture and design to find applicable ones that drive my design process forward, and work extensively with physical models as my main design tool.

An interim objective was also to submit a part of my design proposal to the open idea competition *IMAGINE Open Skåne 2030*, which I also have done.

I myself have a bachelor degree in *built environment* from Malmö University where I've been working a lot with urban environments at different scales, from dwelling to neighbourhood. These scales have something that intrigues me and that I've chosen to elaborate further upon within this master thesis.

RESEARCH QUESTION

**HOW CAN THE BUILT ENVIRONMENT
IN AN URBAN SEAFRONT CONTEXT
BE ADAPTED TO COPE WITH
SEA LEVEL RISE WHILE STILL
PROVIDING OPPORTUNITIES FOR
REDEVELOPMENT?**

SECONDARY QUESTIONS:

How can valuable cultural heritage be kept and repurposed when it merges with an expanding city core and be able to function together with new systems and structures?

How can we design for a habitable micro climate in such a windy and harsh environment as former harbour areas like Nyhamnen?

How can atmospheric qualities be used as points of departure when redeveloping a brownfield area such as Nyhamnen?

METHOD

The overarching method I've been working with is *design research*, originated from Murray Fraser's overview *Design Research in Architecture* [2013]. Design research is an open ended research method that uses many design oriented tools in the quest for new knowledge. To structure my process, I have organized my subordinated methods into two categories; *on site* methods and *in studio* methods.

On site I've been observing, sketching, photographing, filming, climbing and discovering to create an empirical foundation of data to analyse further. In my studio I've been reading, writing, sketching, searching for references and working with both physical and digital models. The on site and in studio methods have been altered and used when necessary, initially with an emphasize on the *on site* methods, and on the *in studio* methods later on during the project.

I have not had a set program for the design proposal regarding what it should comprise and how it should be programmed. I have instead worked with the spatial and temporal issues of my research questions to nurture

DELIMITATIONS

the existing qualities more thoroughly. I have begun this process within this thesis but the next step, beyond this master project, would be to more thoroughly figure out what these physical additions and transformations can hold, contain and be programmed for.

The focus of this thesis lies in the spatial and atmospheric qualities of the site, in the relation between the buildings and the surrounding space's micro climate. Thus I do not go into constructional detailing or profound material choices. Nor do I elaborate further on larger regional scales.

The geographical delimitation for the design proposal is concentrated around Hullkajen. But since the project is rather conceptual the framework could be reproduced and used at other locations both within and outside Nyhamnen that faces similar questions and shares similar problematic.

Concerning societal delimitations this thesis does not take social and economic aspects such as affordable housing under consideration. This was something I initially had in mind including in this project, but it grew into a too large siding which I believe should be dignified with its own thesis.

In the matter of vegetation, I do not go into species of plants, both due to my prior education and personal interests, but also since it has not been the focus of my explorations.

Regarding other impacts of climate change I have limited the project to deal with the aspects of sea level rise and sustainable usage of resources. These notions are elaborated on through multiple layers and the concept of superuse.

The time frame of this project stretches quite far into the future, and could probably not be realized in a trice. But at the same time the project deals with short term, contemporary and temporary inventions to intercept the ever changing urban dynamics.

EMERGENCE

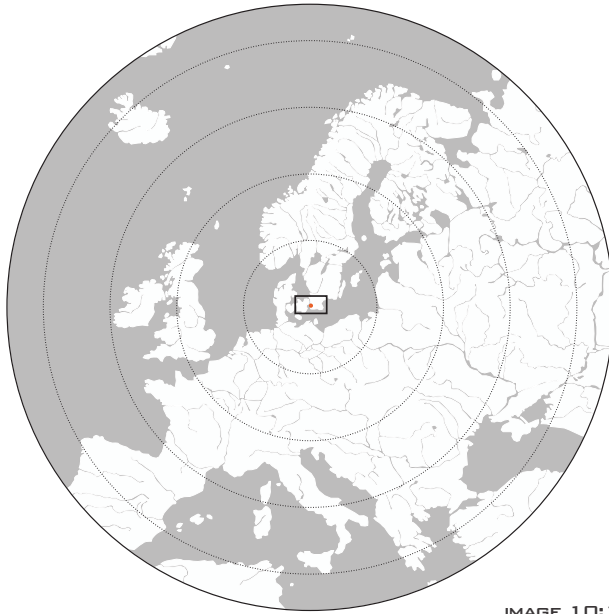


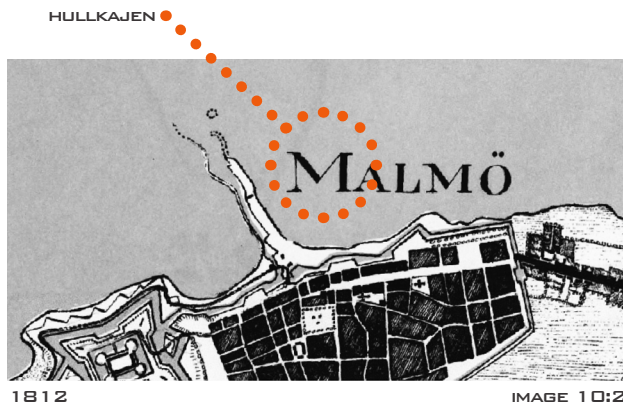
IMAGE 10:1

In the centre of Europe - geographically speaking - is the city Malmö located and is with its approximately 300,000 inhabitants Sweden's third most populated city. Like many other northern European cities' harbour areas, the harbour of Malmö grew large both in physical extent and importance for the city's economy during the 20th century.

Malmö's coastline and the harbour's territory has been transformed and expanded for the last two hundred years. In 1812 Malmö mainly comprised a shielded town area with a protective citadel in the west [IMAGE 10:2]. The harbour area was not yet very expanded and the site where Hullkajen is located today was still open water.

A hundred year later, in 1912 large areas of landfill have been created to handle the growing harbour activities [IMAGE 10:3]. Malmö Central Station is in operation and the western harbour has modestly begun to materialize. Hullkajen has already now taken the approximate shape it has today and is the last frontier towards Öresund.

In 1940 the harbour area has continued to grow westwards and northwards, but particularly grown in size eastwards [IMAGE 10:4]. During this period the shipyard company Kockums - that had been operating since the late 19th century - grew to one of the largest shipbuilding companies in the world.



1812

IMAGE 10:2



1912

IMAGE 10:3



1940

IMAGE 10:4

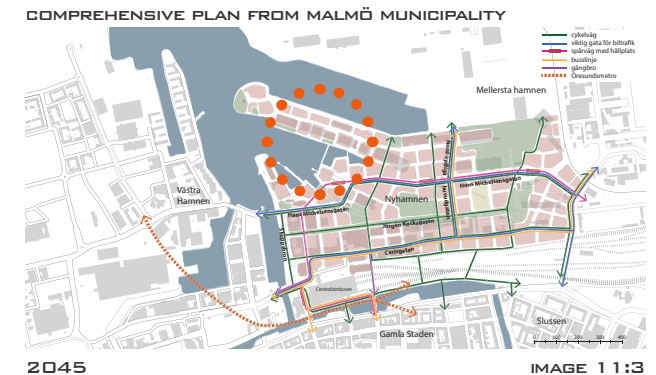
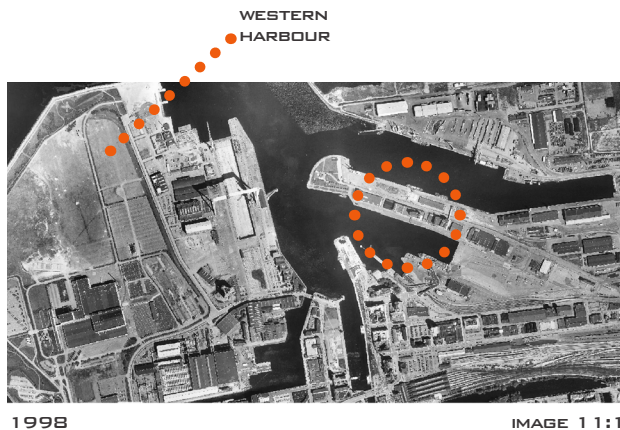
Fifty years later, in the late 1990th the coast line of the western harbour is fully expanded, but still undeveloped **IMAGE 11:11**. The area around Hullkajen has now gotten the shape it has today. With the decision to build a car and railway bridge over Öresund to connect Malmö and Copenhagen in the 1990s, Malmö seized the opportunity to re-brand from industrial city to knowledge city, and hosts today Sweden's largest University **[MAH.SE]** **[MALMO.SE1]**.

In 2015 most of the western harbour is exploited with buildings **IMAGE 11:21**. The Turning Torso is erected, Malmö University is building new facilities

and Hullkajen is starting to get inhabited by other businesses than the former industrial activities.

In 2016 Malmö municipality produced a detailed comprehensive plan (fördjupad översiktsplan) over the whole area on Nyhamnen, which includes the reshaping of Hullkajen and its existing structures **IMAGE 11:31**. The area is about to be redeveloped and the vision from Malmö municipality is a new mixed use dense inner city district with offices, businesses, dwellings, schools, activities etc **[MALMO.SE2]**. I have worked thoroughly with this detailed comprehensive plan within both this thesis and previous projects, but do not comply strictly with it

within this project. I'm aware of Malmö municipalities plans for the area, and see my contribution as something questioning and to some extent deviant from their intentions.



HULLKAJEN

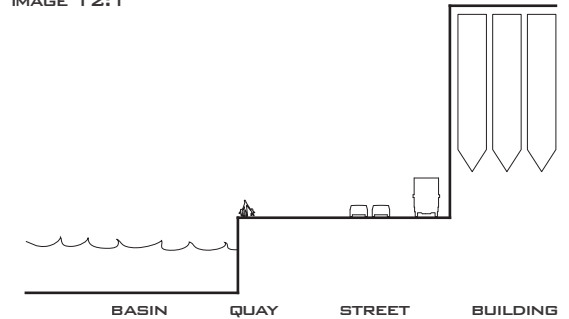
In the north-west corner of Nyhamnen is a pier constructed between the two basins *Frihamnen* in the north and *Nyhamnen* in the south. Along this south facing side of the pier is the quay Hullkajen situated [IMAGE 13:2].

Hullkajen's connection to the sea and proximity to central parts of Malmö makes it a most interesting area which also is loaded with cultural heritage from the harbour era in forms of old industrial buildings, quays

and large open spaces [IMAGE 13:2]. Along Hullkajen there are four large former harbour building structures which today are partially used for harbour activities, and partially have transformed into offices, shops, restaurants, cafés, workshops etc. [IMAGE 15:1 & 15:2 & 15:3].

All of Nyhamnen comprises around 70 hectares, Hullkajen includes around 3 of these. The stretch is very linear east to west, with BASIN - QUAY - STREET -

IMAGE 12:1



BUILDING from south to north all along Hullkajen IMAGE 12:11. When the area transforms into a mixed city district and the last harbour activities vanishes we will have large empty structures to reprogram and make use of in other ways than before. These buildings would otherwise probably be torn down and replaced, which I believe then could mean large cultural heritage loss if not handled properly.

On the one hand the area today seems large, empty and even deserted due to the vast open tarmac spaces, unused rails, cordons and fences. But on the other hand the area also strikes as quite buzzing with the wind making noises, birds swarming in different formations, the seed company's machines humming and moving seed from silos to boats and trucks, people walking and bicycling to and from the restaurant Saltimporten around lunch time, people strolling or fishing along the quays etc. etc. IMAGE 13:11.



IMAGE 13:1



IMAGE 13:2

2D-ANALYSIS

Due to the pier's linearity, Hullkajen comprises different characteristics where the linearity is accentuated. The motor driven traffic for instance follow the pier lengthwise north of the existing buildings, and merges with the bicyclists and pedestrians south of the buildings [IMAGE 14:1].



IMAGE 14:1

Between the existing buildings there are cross connections that connects the motor trafficked street north of the buildings to the today mixed mode of transportation passage along the quay in the south [IMAGE 14:2].

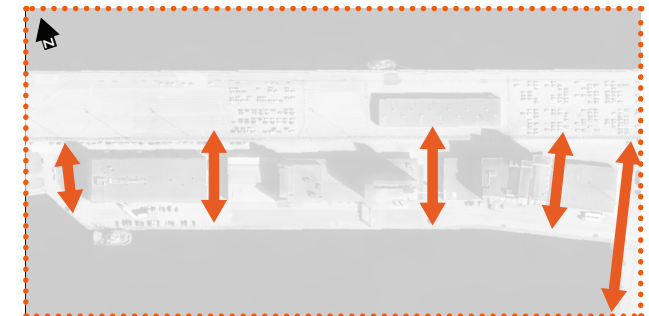


IMAGE 14:2

The buildings along Hullkajen consists of four blocks with different heights, with almost flat roofs at seven meters' height up to roofs on top of silos at around forty meters height [IMAGE 14:3].

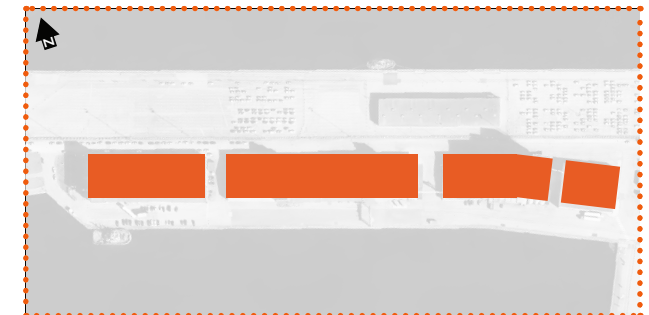


IMAGE 14:3

EXISTING BUILDINGS

Beginning from the west, the first 4258 m² large building along Hullkajen is named *Korallen 1* [IMAGE 15:1]. It was built in 1961 and was initially used to facilitate imported salt. Today the building hosts as much as 27 small businesses within different fields of work [SALTIMPORTEN.SE].

The next 6000 m² large building along Hullkajen is named *Korallen 2* [IMAGE 15:2]. This building was built by Lantmännen in 1948 and were used as feed storage and is still today used for similar storage [ARCHIVE MALMÖ].



IMAGE 15:1

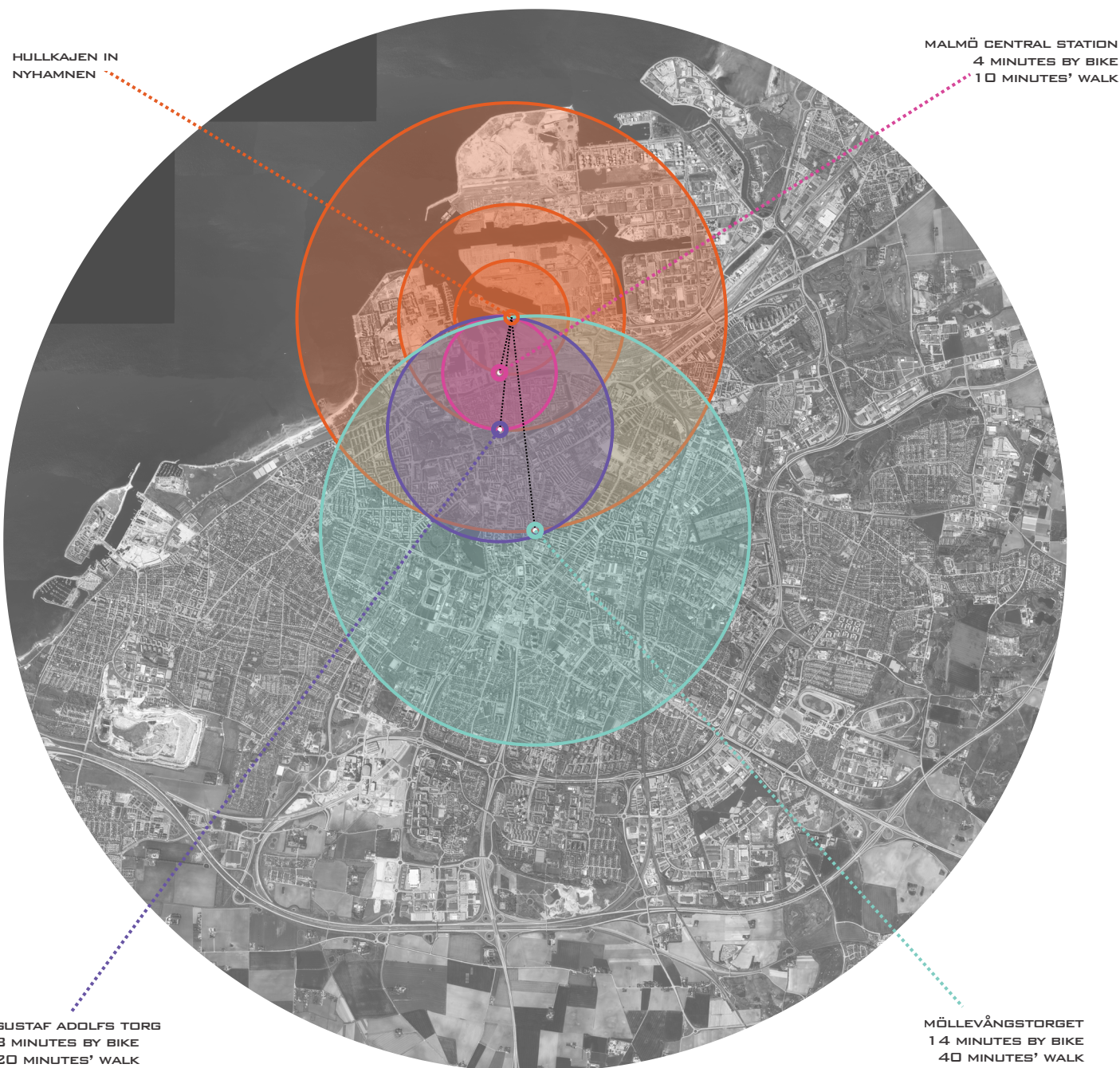


IMAGE 15:2



IMAGE 15:3

DISTANCES



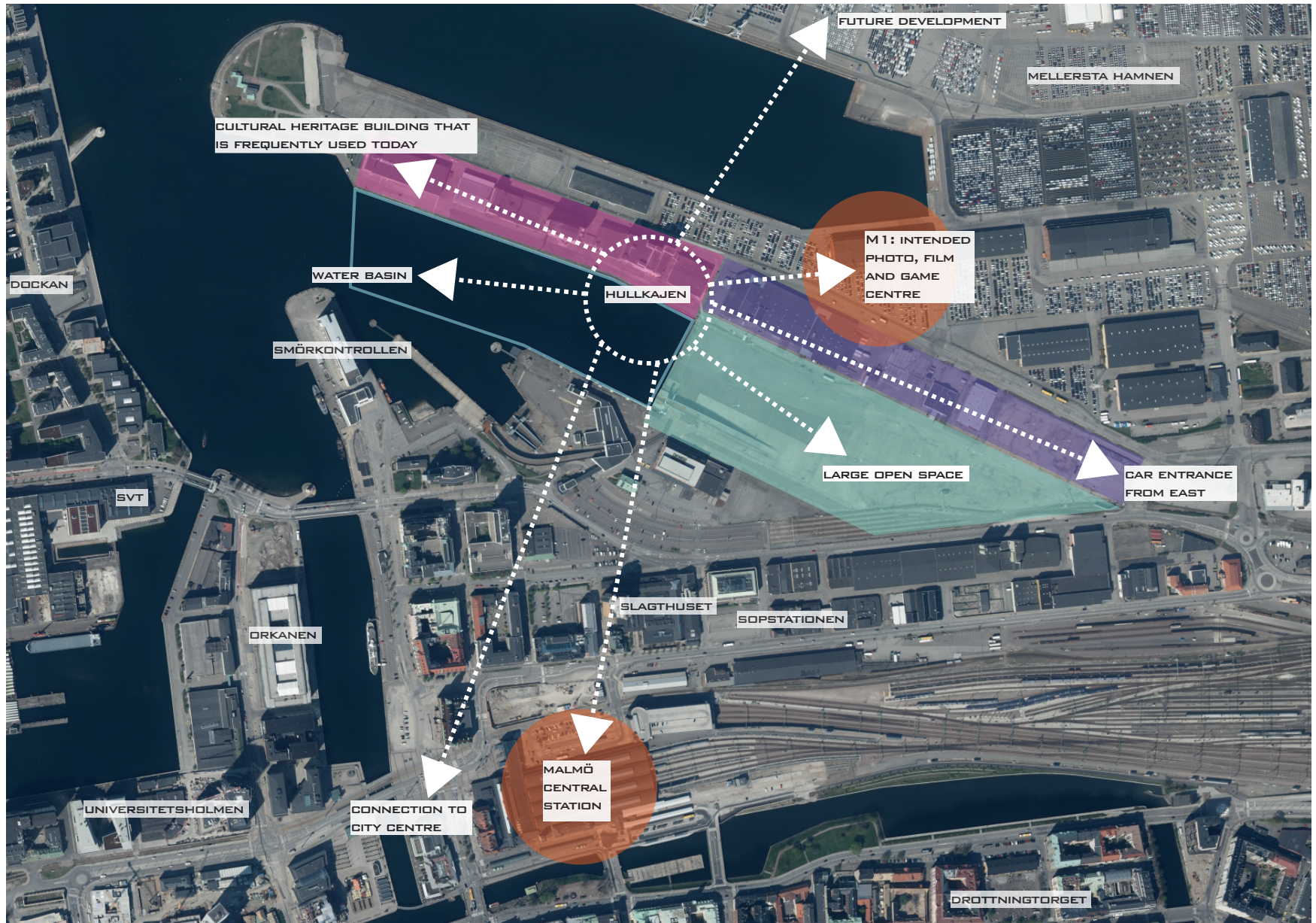
THE DISTANCE DIAGRAM SHOWS NYHAMNEN'S GEOGRAPHICAL SITUATION IN MALMÖ, AND THE DURATION DISTANCES TO A FEW WELL-KNOWN NODES IN THE CITY.

The pink circle is centred around Malmö Central Station and shows the distance to Hullkajen and other parts of Malmö within the same range. The purple circle centres the square Gustaf Adolfs Torg with the same distance ratio. The turquoise circle is centred around the down town buzzing square Möllevångstorget. These circles provide geographical proportions to understand Nyhamnen's close proximity to several important destinations in Malmö.

The orange circles are all centred around Hullkajen and shows its location within the wider harbour area, which also is planned for mixed city use in the future. Thus is Nyhamnen already today very centrally located within Malmö, and will be even more integrated in the future.

CONNECTIONS

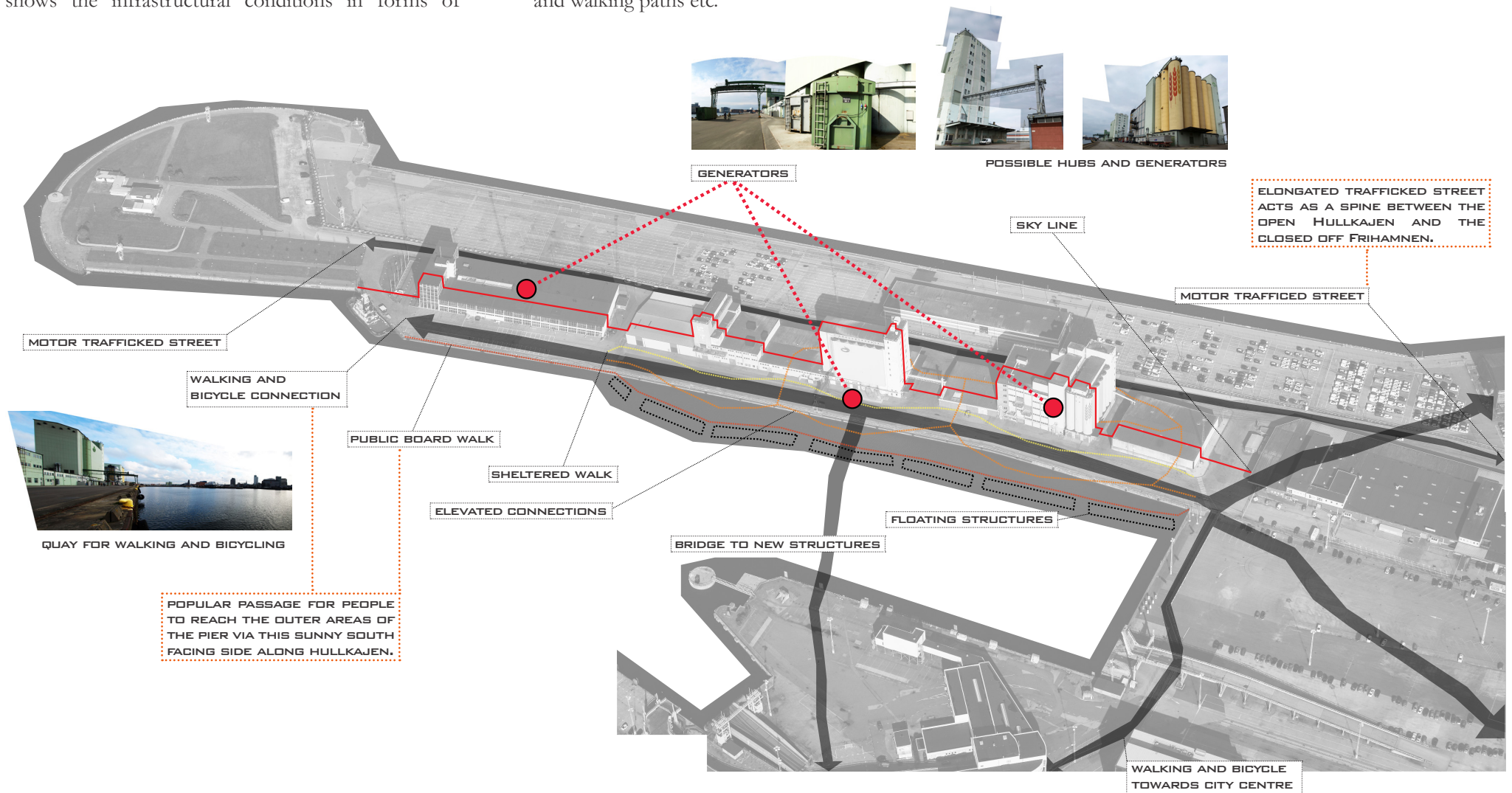
HULLKAJEN WITH ITS CONNECTION
TO NODES AROUND NYHAMNEN.



MAPPING

At an early stage of the process I made site visits and created mappings and assessments of strengths, possibilities and visions at Hullkajen. This diagram shows the infrastructural conditions in forms of

trafficked streets, important nodes and generators that could function as hubs where activities can spawn, passages over the water, possible bicycle lanes and walking paths etc.

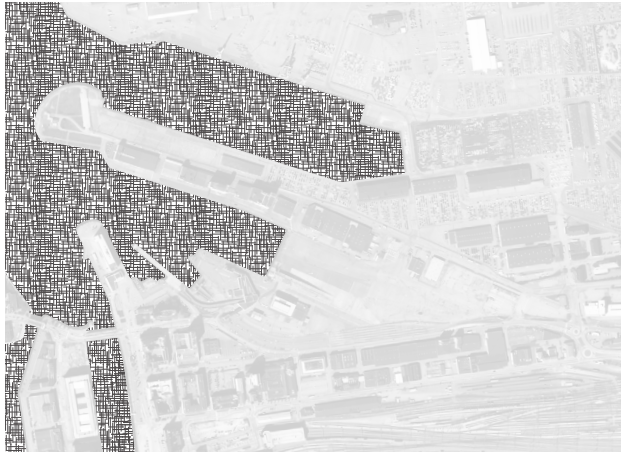


liveliness, micro climate conditions, centres, opportunities, ideas etc.



DYNAMICS FORCES

WATER



TODAY'S NORMAL WATER LEVELS

IMAGE 20:1

WATER LEVEL DIAGRAM SHOWING TODAY'S NORMAL LEVELS AND FUTURE SCENARIOS IN NYHAMNEN WHEN SEA LEVELS ARE RISING.



2,5M ABOVE NORMAL WATER LEVELS

IMAGE 20:2

LEVELS AT 2,5 METERS ABOVE NORMAL WILL HAVE LARGE IMPACT ON NYHAMNEN'S TOPOGRAPHY AND MAJOR AREAS WILL BE COVERED WITH WATER.



3M ABOVE NORMAL WATER LEVELS

IMAGE 20:3

AT 3 METERS ABOVE NORMAL WATER LEVELS THERE WILL BE ISOLATED ISLANDS IN NYHAMNEN THAT AT THESE TIMES NEEDS TO BE PREPARED TO BE DISCONNECTED FROM THE CITY CENTRE FOR PERIODS OF TIME.

A prognosis made from the county administration of Skåne estimates that the sea levels around Malmö will steadily increase over the next hundred years and will by the year 2100 be one meter higher than it is today [LANSSTYRELSEN.SE]. That is the linear aspect of

it. If we add the cyclic level differentiation, meaning temporary flood levels over seasons and months and the occasional rapid changes such as storms, heavy rainfalls and pressure from other seas we are facing rises of up to three meters above today's normal levels.

This thesis proposal suggests that the site should be able to function autonomously in island-mode for these periods and contain all necessities for a functioning society.

SUN

The situation at Hullkajen with façades facing south create favourable conditions for outdoor activities and seating. Sunny days the industrial buildings are soaked in sunshine which I believe is a highly valuable aspect to have in mind when redesigning the area **IMAGE 21:1**.



IMAGE 21:1

WIND

According to the program from Malmö Municipality's parallel commission, the strongest winds are blowing from the west and the coldest from the east. Nyhamnen have large open spaces where the wind moves freely and strongly **IMAGE 21:2**, but at Hullkajen the existing structures protects from northerly winds.



IMAGE 21:2

LEVELS

Nyhamnen is loaded with structures containing various horizontal layers. There are ramps, fields of asphalt, warehouses, basins, silos, cranes that together create a landscape of landscapes. Smaller ones contained in the larger that all can be used and programmed in other ways than they've previously functioned as.

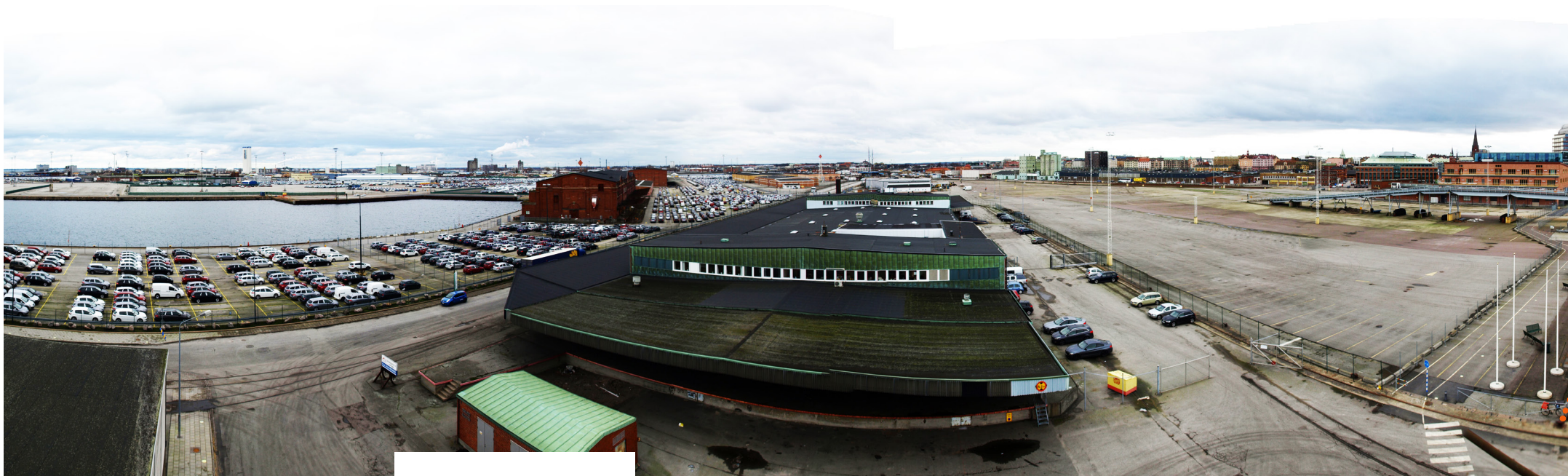
The water basins create a sub-ground level at a depth of six to nine meters. This level is normally covered with water, but could be drained from water if necessary

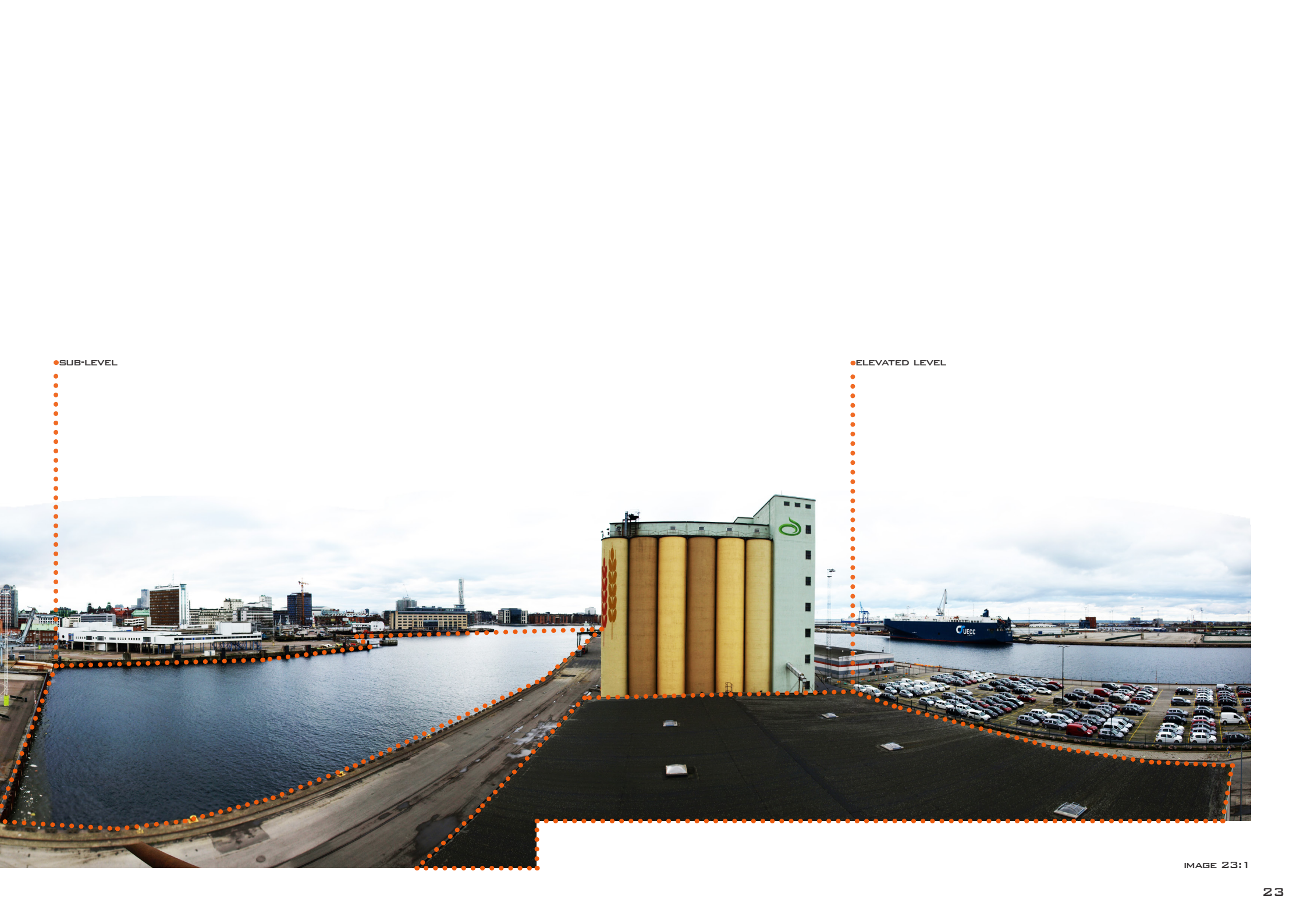
IMAGE 23:11.

The ground-surface level is the most prevalent in the area. This level contains huge amount of surface that

will - if no measures are taken - flood from time to time in the future.

The next level at Hullkajen consists of large roof areas at around seven meters' height. These roofs will not be directly affected by floods, and could therefore be benefited from in these situations IMAGE 23:11.





● SUB-LEVEL

● ELEVATED LEVEL

IMAGE 23:1

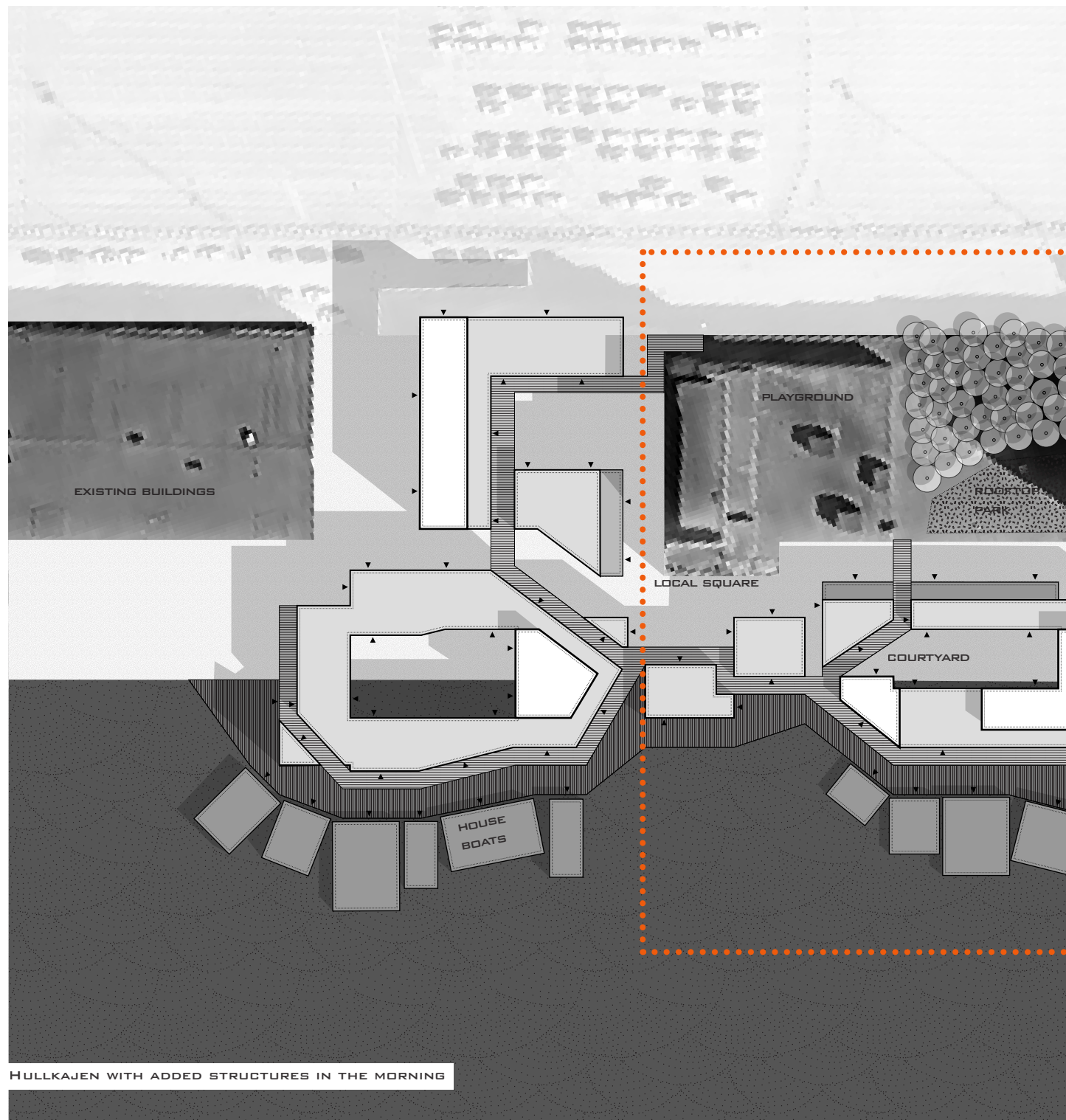
HULLKAJEN

The whole system of buildings, both new and existing together are intended to function autonomously for periods of time when the water levels are higher than the quay's ground surface level. Every activity, business and dwelling within the system are connected to entrances both on ground level and to the elevated paths.

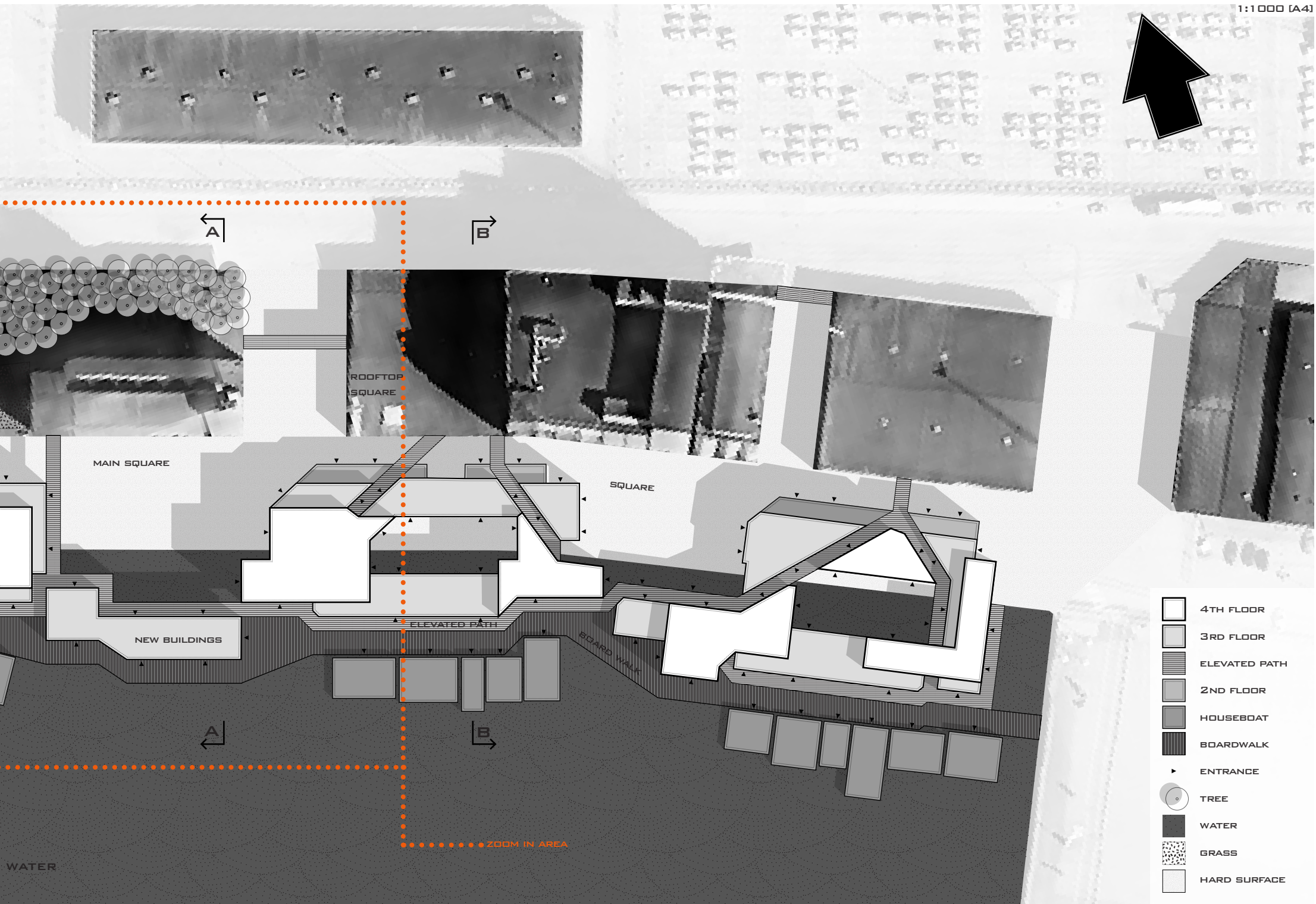
The elevated paths are then the main connecting system between the different buildings. The added buildings are adapted to withstand water with water resistant walls at the lowest floor. The already existing buildings have walls that rises from the ground when needed. The houseboats follow the water levels, and so are the wooden board walk they are connected to.

Privately owned house boats, condominiums, collectively ownership and rental apartments are not divided but share all the same infrastructure on block level. They all share amenities and necessities such as waste collection and bicycle storage in the courtyards.

SIZE OF AREA:	30 000 M ²
GROSS FLOOR AREA:	50 000 M ²
FLOOR SPACE INDEX:	1,7



HULLKAJEN WITH ADDED STRUCTURES IN THE MORNING



- 4TH FLOOR
- 3RD FLOOR
- ELEVATED PATH
- 2ND FLOOR
- HOUSEBOAT
- BOARDWALK
- ENTRANCE
- TREE
- WATER
- GRASS
- HARD SURFACE

LEVELS & LAYERS

The added structures are built up by five layers, which are relating to the three levels; the *sub-level* which is the bottom of the basin; the *ground-level* which is the surface of the quay; and the *elevated-level* which is at two stories height i.e. at about seven meters' height above ground-level [IMAGE 26:1].

The first layer is built up by courtyards that has openings in four directions so that they're easy accessible for everyone who uses them, and it's easy to access the surrounding areas [11]. This floor can shut down to the outside when the water level rises. This is also where most of the businesses and activities will take place that has direct connections to the exterior context. These businesses are also accessible from the elevated path since they are an important factor to the systems autonomous functions and it's crucial to keep them up and going when in island-mode.

The second layer consists of larger and more cohesive shapes that acts as roof to the courtyard passages [12]. This floor is mainly programmed as dwellings, since they do not have the direct connections to any outside level, if they are not two storeys high. These apartments

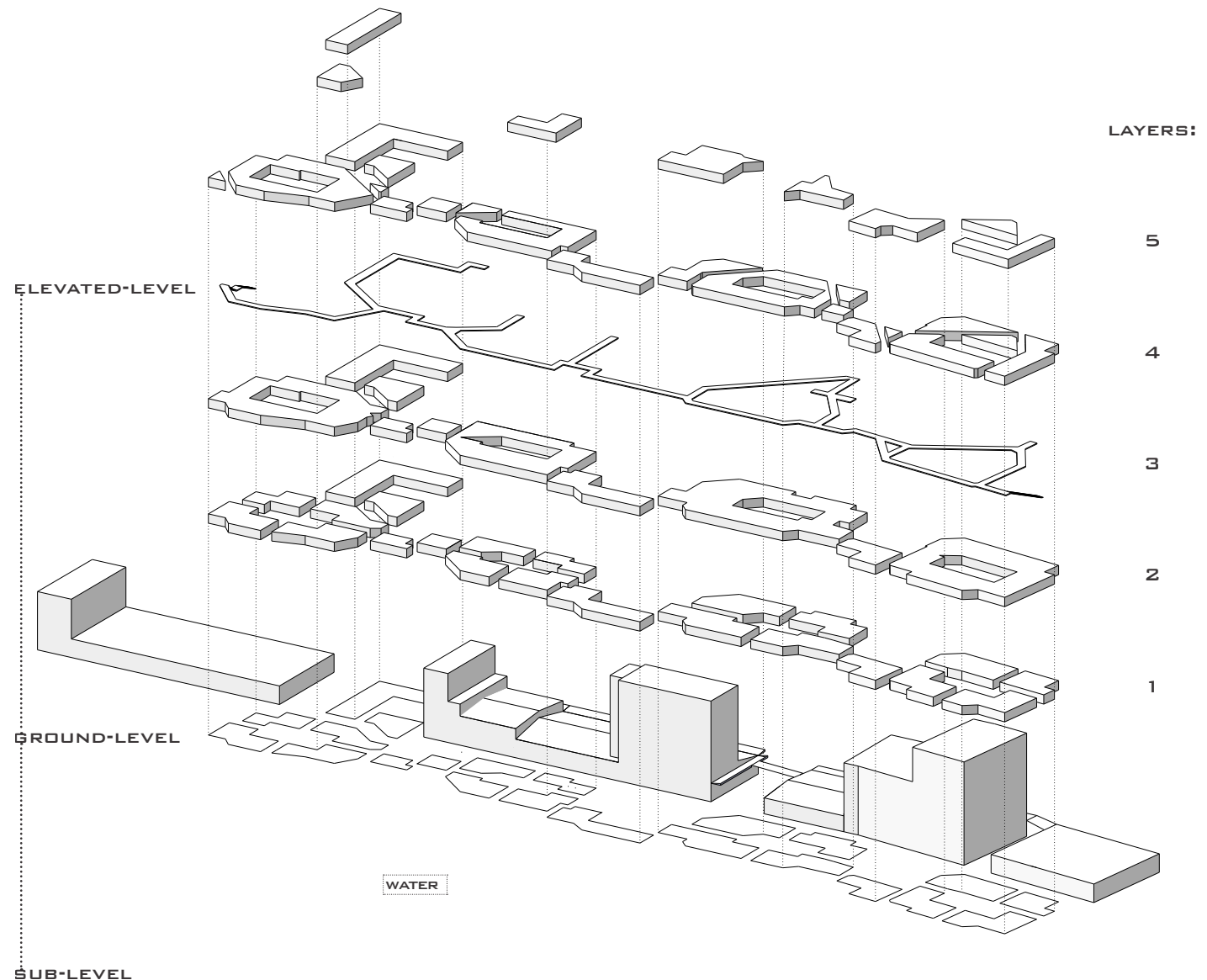


IMAGE 26:1

are accessible through stairwells that connects to both the ground-level and to the elevated-level.

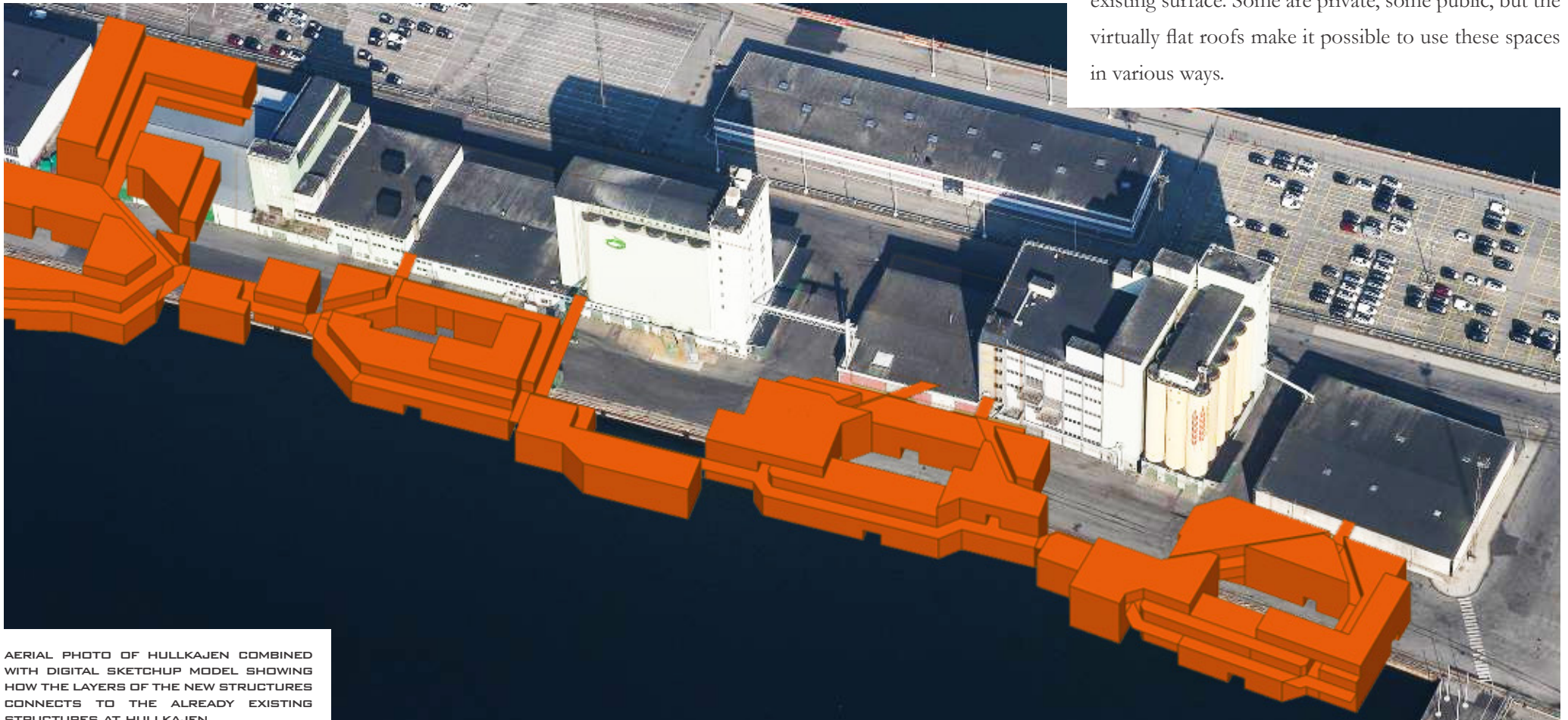
The third layer is the elevated path that runs through the entire system ¹³¹. This is where the movement mainly occurs during high water levels. This is also the connection between the new and the old structures for dwellers who are going to the park, the kindergarten,

the rooftop square etc. The path is designed to enclose around the squares and wriggle outside the courtyards, both for privacy aspects for the inhabitants and to strengthen the connection to the water.

The fourth layer is directly accessible from the elevated path and can function for both dwellings, businesses and other activities since they are easy to reach at all

times, even - and especially - when the system is in island-mode ¹⁴¹.

The fifth layer is sparser deployed since the height easily shadows areas that preferably are exposed to sunlight, but on the other hand blocks the wind due to its height ¹⁵¹. On top of every layer gardens and accessible spaces are landscaped to make use of this existing surface. Some are private, some public, but the virtually flat roofs make it possible to use these spaces in various ways.



AERIAL PHOTO OF HULLKAJEN COMBINED WITH DIGITAL SKETCHUP MODEL SHOWING HOW THE LAYERS OF THE NEW STRUCTURES CONNECTS TO THE ALREADY EXISTING STRUCTURES AT HULLKAJEN.

SUN & WIND

Attention and adaptation to sun and wind has played a pivotal role throughout this project due to its exposed location in this west coast harbour. Malmö has quite large differences in angles of sun between summer and winter seasons. Investigations have been carried out to find heights of buildings and structures that protects from undesired wind, but at the same time does not shadow areas that are depending on direct sunlight

[IMAGE 28:1 & 28:2].

The shapes of the added structures are designed to let the sun primarily into the squares, inner courtyards and already existing buildings. They are at the same time directing the wind to travel over and around the outdoor populated areas.

The existing structures have a shape that shelters from the wind coming from north, east and west,

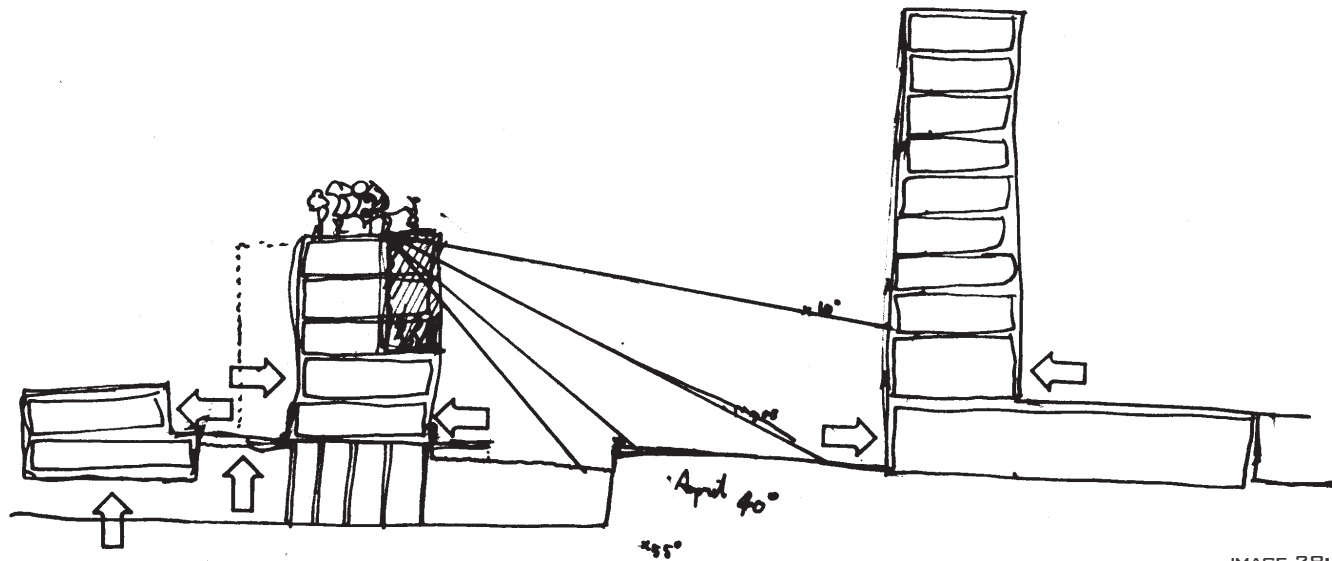


IMAGE 28:1

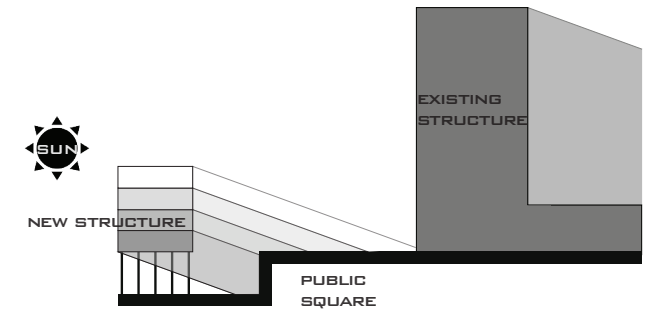


IMAGE 28:2

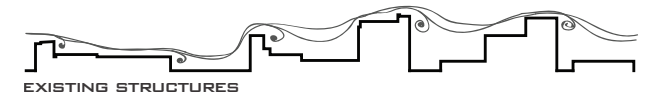


IMAGE 28:3

but replicating their height would create large areas in permanent shadow, thus not a desirable solution for Hullkajen. The shape is instead mimicked to some extent to make the wind travel above the structures, but are scaled down to primarily favour the squares micro climate conditions [IMAGE 28:3].

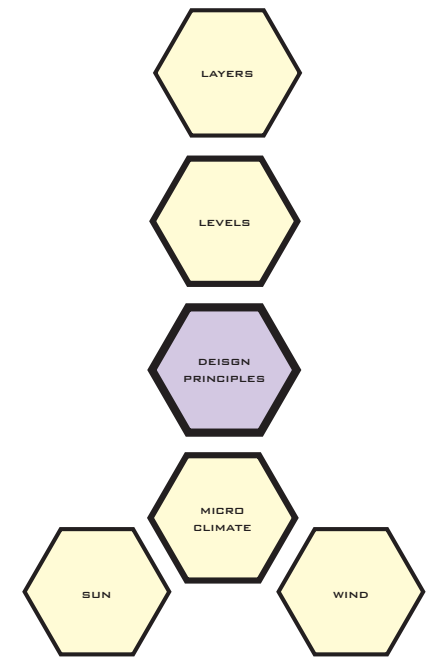
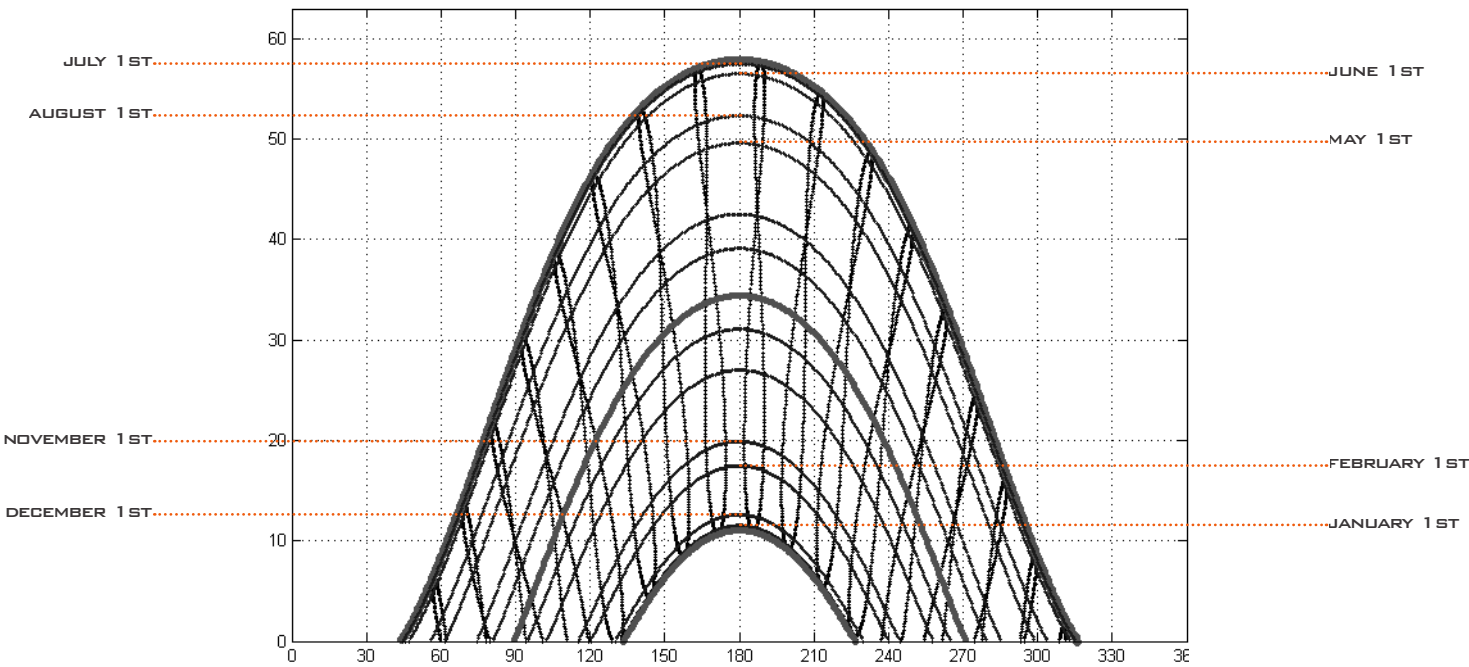


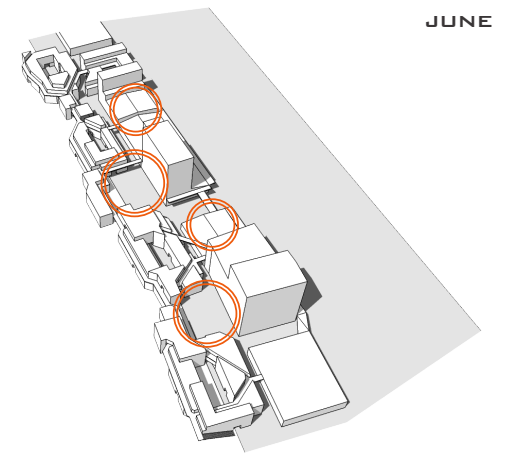
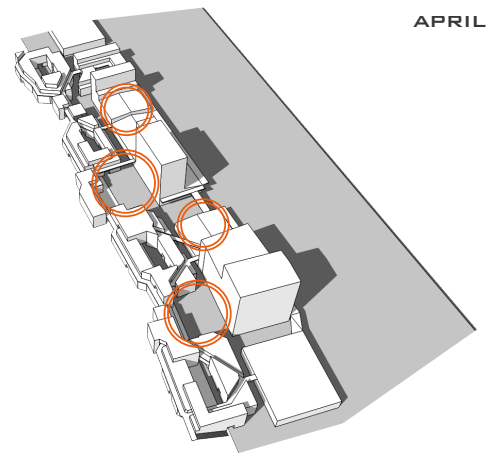
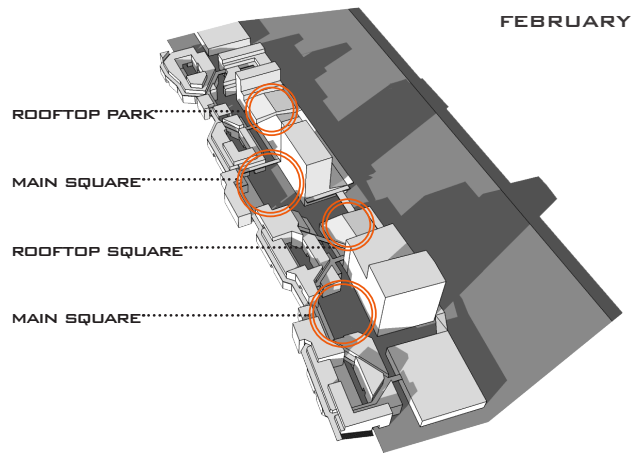
IMAGE 29:2

This sun path chart (solbanediagram) from the Swedish Meteorological and Hydrological Institute shows at what angle the sun radiation hits Malmö at different times of the year and has formed the basis for the sun studies conducted within this thesis [IMAGE 29:1].

The top two curves symbolize the first of July and the

first of June which have the largest sun angle during the year. The sun almost reaches 60° when at noon the first of July. The next two curves symbolize August and May etc. Four of the months (November, December, January and February) are all below 20° angle at noon. This has been something that I've had to take into consideration when modulating the heights of the design proposal.

The two main design principles within this project are *levels* and *micro climate* [IMAGE 29:2]. Within these principles *layers*, *sun* and *wind* are subordinated.



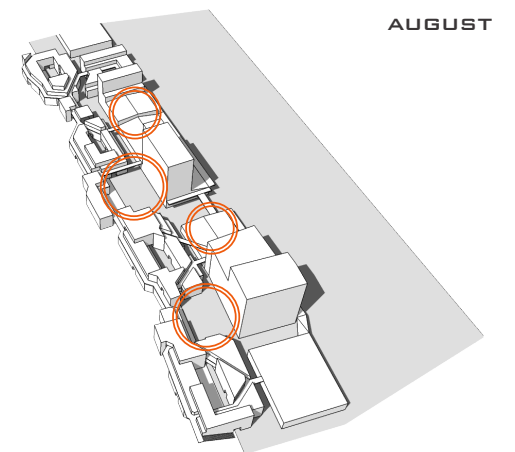
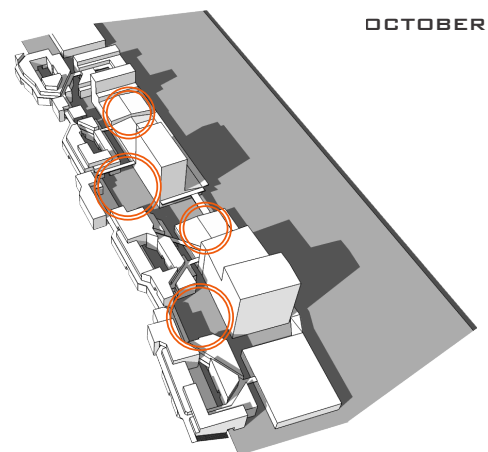
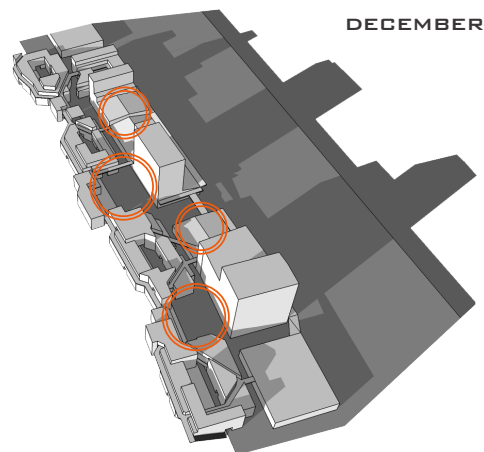
SOLAR STUDIES

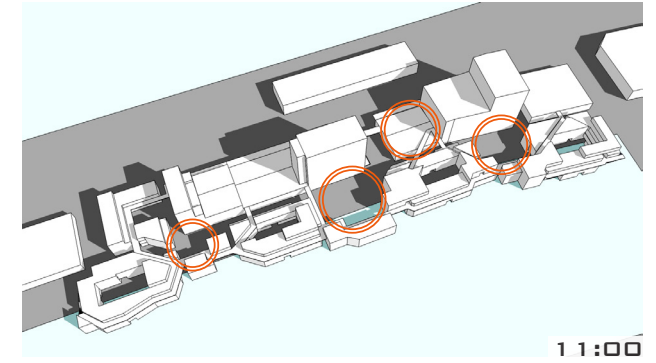
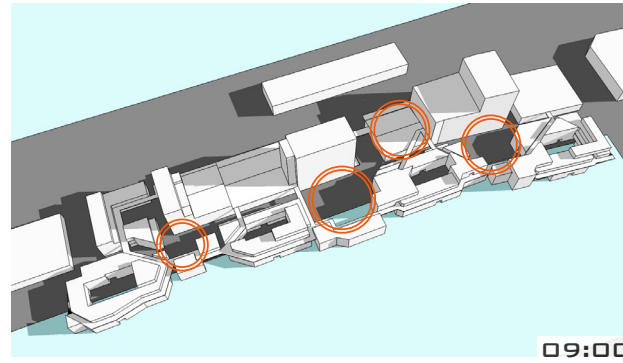
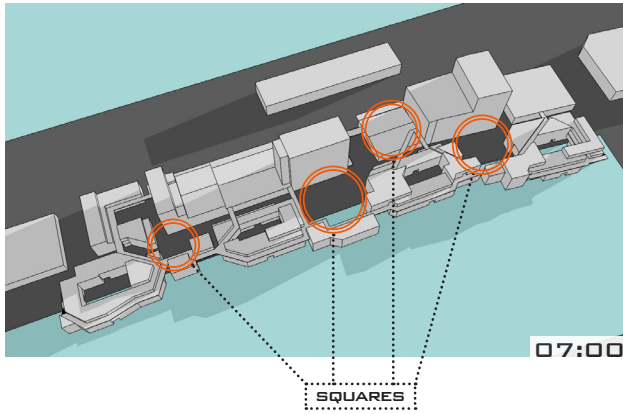
The micro climate at the site is crucial due to its exposed location. Since Hullkajen have the tall existing buildings in the north there are large amounts of direct sunlight to benefit from and work with along the south

façades. Thus I need to be sensitive with heights of new structures to be able to keep this quality.

This solar exposure study has been conducted through Sketchup, and shows where there is sun, and where

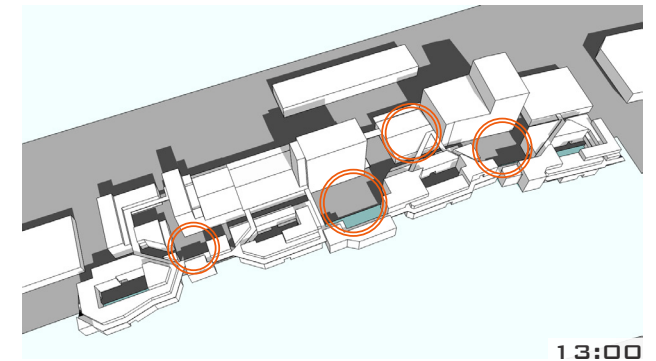
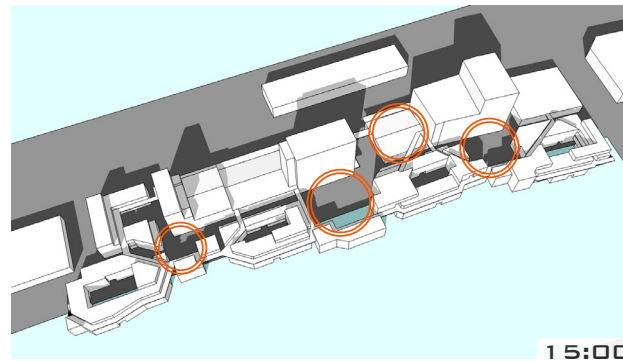
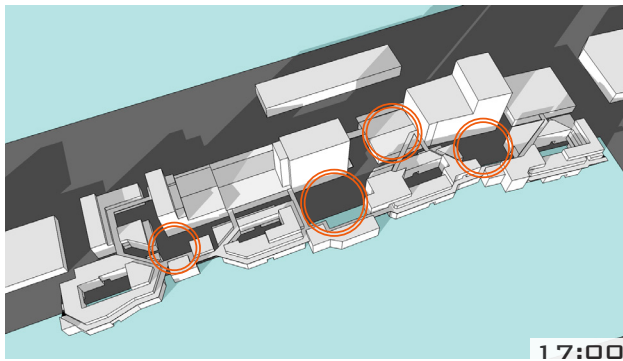
there is shade during the year. Each picture is taken at noon the 1st of each month. The shadows from the large existing structures are very tall during the darker months, but when the sun rises higher above the horizon the light reaches further down into the squares and courtyards at Hullkajen.





This solar study has also been conducted through Sketchup, and shows the length of the shadows during the day of the 21st of March, at the spring equinox when the day and night are equally long. I've performed this kind of studies many times during the process to ensure that at least the main square gets enough sun

during the summer season. The smaller squares in west and east starting to get a little sun during the days in the end of March while the large central square and the rooftop square already have many hours of direct sunlight each day.



ZOOM IN

On top of one of the existing buildings there is a new playground connected to a kindergarten in the building beneath, which also have direct contact to the rooftop park which is located at seven meters' height i.e. at the elevated path's level.

The estimated amount of people dwelling in the whole system would be around 1000 inhabitants. According to the municipality of Malmö's figures 7% of Malmö's population is between 1-5 years old, meaning around 70 children will need a place in a kindergarten [MALMÖ, SE31].

The rooftop park is divided into sections that all can be used by the kindergarten at daytime, and both the park and playground is available for the public during other hours.

The main square has a lack of shelter from the wind due to its size, but receives on the other hand more direct sunlight, which makes it highly suitable for outdoor seating during favourable weather conditions.





INHABITANTS:	CA 1 000
CHILDREN 1-5:	CA 70

A kindergarten containing 70 children requires around 700 m² indoor space and 2100 m² outdoor play area [MALMO.SE4]. The rooftop kindergarten includes slightly more indoor space and more than 2700 m² outdoor area if the complete park space is used.

The kindergarten is one of the systems vital components when it has to function in island-mode. Other parts of the system contain everything else the society needs to function for a shorter while, such as pharmacy, supermarket, cinema, library, gym etc. During the periods in island-mode the system and its businesses is reachable for public transportation in terms of boats from nearby systems and other parts of the city.

KINDERGARTEN	CA 890 M ²
PLAYGROUND	CA 890 M ²
ROOFTOP PARK	CA 1 800 M ²

A section through the main square showing from the right: the rooftop park, one of the tall existing structures, the main square, the edge of the quay with new structures in the background, a cut through the elevated path and new structures, the floating board walk and finally the house boats.





OFFICES

RESIDENTIAL

PUBLIC

PUBLIC

SECTION A-A FACING WESTWARDS

1:200 [A4]



SECTION B-B FACING EASTWARDS

1:200 [A4]

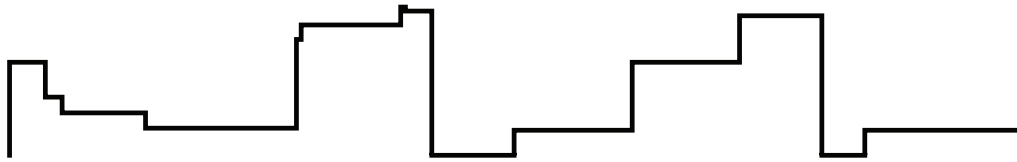
When the water level rises, the lowest floor of the buildings won't be direct accessible from the ground level. The board walk connected to the houseboats are floating and follow the water and can be used as well as the elevated paths on top of the second floor. The added buildings' ground floors are water proof, but the already existing buildings needs a risable wall that protects them from the water.





VIEW FROM THE ROOFTOP SQUARE ON TOP OF ONE OF THE EXISTING BUILDINGS LOOKING DOWN ON THE MAIN SQUARE TOWARDS THE SOUTH-WEST.

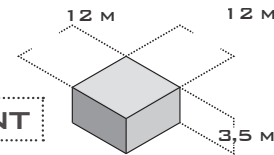
EXISTING



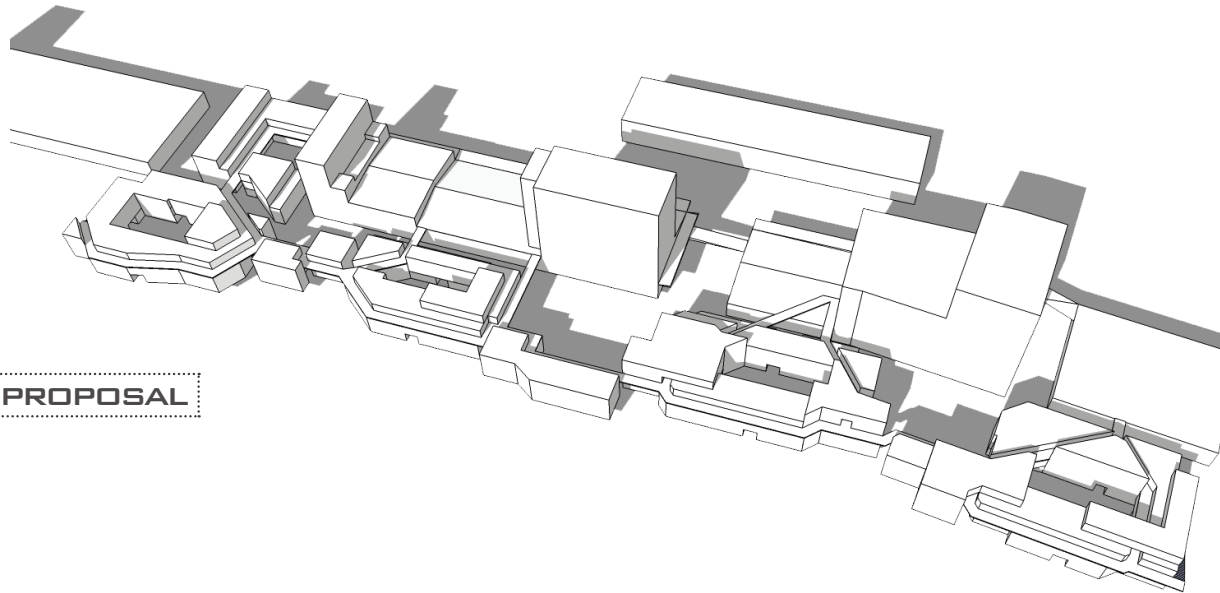
GESTURES



INCREMENT

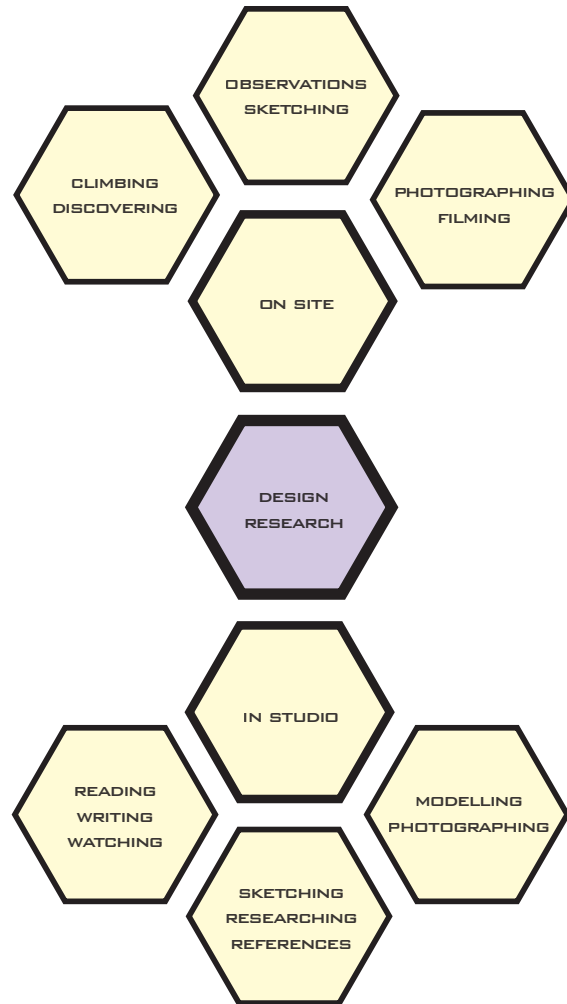


PROPOSAL



THIS MAJOR FEATURES DIAGRAM SHOWS HOW MY DESIGN PROCESS VERY BROADLY HAS DEVELOPED THROUGH MODELLING WORKSHOPS. THE NEXT CHAPTER EXPLAINS THE THEORETICAL FRAMEWORK BEHIND THE PROPOSAL.

METHOD



The methodological framework for this thesis is mainly derived from *design research*. This approach is elaborated on in Murray Fraser's overview *Design Research in Architecture*, and deal with the kind of new knowledge generating architects and designers produce when undergoing a design process [FRASER 2013]. This process is seen by the author as more open ended than traditional science research:

"As a working definition, architectural design research can be described as the processes and outcomes of inquiries and investigations in which architects use the creation or projects, or broader contributions towards design thinking, as the central constituent in a process which also involves the more generalised research activities of thinking, writing, testing, verifying, debating, disseminating, performing, validating and so on."

[FRASER 2013:2]

"Indeed, architectural design research, if undertaken properly, is open to the full panoply of means and techniques for designing and making that are available to architects - including sketches, drawings, physical models, digital modelling, precedent analysis, prototyping, digital manufacture, interactive design, materials testing, [...]"

[FRASER 2013:2]

The methods I've been using within the design proposal of this thesis I've divided into two categories; *on site methods* and *in studio methods*. My process began with an emphasis on the on site methods, but the two have been altered during the project and became increasingly in studio emphasised towards the end.

ON SITE

The on site methods I've worked with are; *observations* and *sketching*; *climbing* and *discovering*; *photographing* and *filming*. Initially I alternated literature studies with regular site visits to form an image of the sites qualities and specificities. Later during the process when I had accumulated data about the site I spent more and more time in the studio to work with ideas through further sketching and modelling.

The professor of theory and methods in landscape architecture Ellen Braae makes in the book *Beauty redeemed: recycling post-industrial landscapes* a division between initialising a project either from on site observations, or from pre-existing maps showing the cadastral structure [BRAAE 2015:291]. One could

view the first as a bottom up design approach, where what is actually at the site makes the launching pad of the design process. The second on the other hand could be seen as a top down approach where the infrastructural and topological structures leads the process. In this project I've aimed for an emphasis on the on site methods, since I believe immaterial and temporary small scale qualities are easier and better perceived this way.

I started performing the on site methods in January 2016 when the snow still covered the ground and the basin was filled with ice floes [IMAGE 41:11]. When spring arrived the conditions changed, especially the micro climate aspects [IMAGE 41:4].

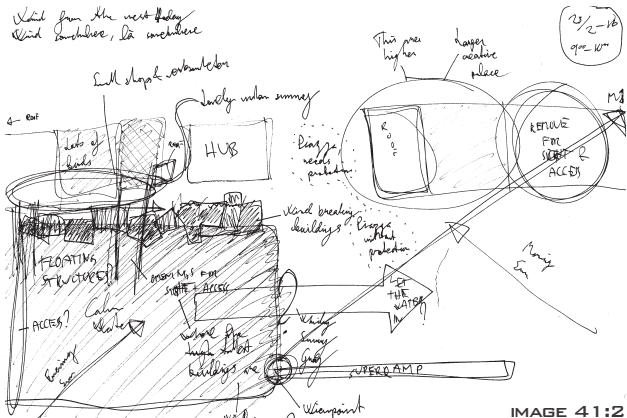


IMAGE 41:2

EARLY ON SITE SKETCHES WHERE ATMOSPHERIC AND MICRO CLIMATE IDEAS BEGAN TO BE INVESTIGATED.

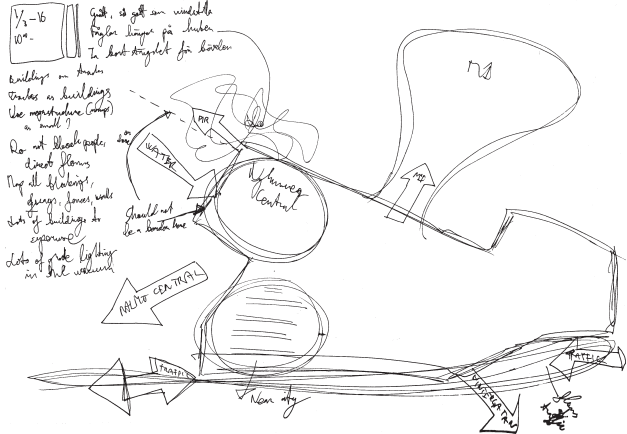


IMAGE 41:3



IMAGE 41:1



IMAGE 41:4

Taking pictures and making panoramas of the site enabled me to recall some aspects and impressions later on in the studio process. The panoramas are also a way to give you the reader an understanding of particular situations and a chance to grasp what a special kind of environment this actually is.

On site sketching has proven to be an instrumental technique for capturing site qualities **IMAGE 41:2 & 41:3**. Some of these initial ideas have prevailed and been developed through the process and some have decayed and lost their relevance.

I've also been filming the movement of seeds, birds, trucks, water to highlight and remember that the site is a living and constantly changing situation that will continue doing so after this proposals engagement.

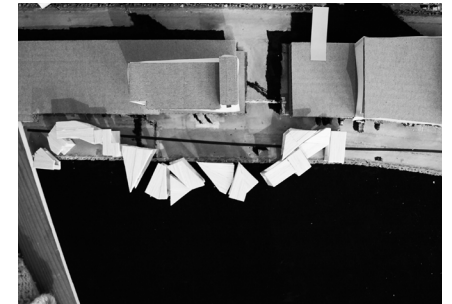
IN STUDIO

The in studio methods I've worked with are; *reading*, *writing* and *watching video clips*; *sketching* and *searching for reference projects*; *physical modelling*, *model photographing* and *digital modelling*. This is where the actual physical design proposal has taken its form and been further developed.

"[...] the creative aspect becomes the dominant part of the investigation, and to achieve that it has to introduce its own ideas of testing and evaluating, even in rather lateral or unexpected ways."

[FRASER 2013:3]

BUILDING UP THE SITE IN 1:500 IN STUDIO, WORKING WITH CARDBOARD, TRACING PAPER, FOAM PLASTIC, GLUE, TAPE, STRINGS ETC. TO EXPERIMENT ON SPACE AND MICRO CLIMATE ISSUES.



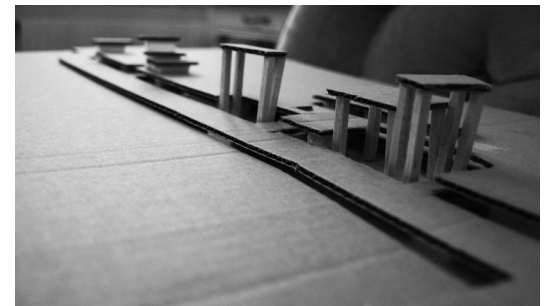
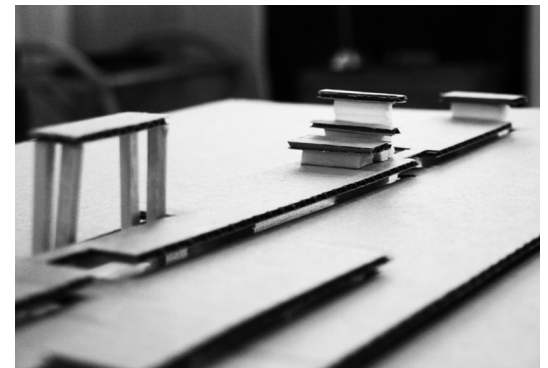
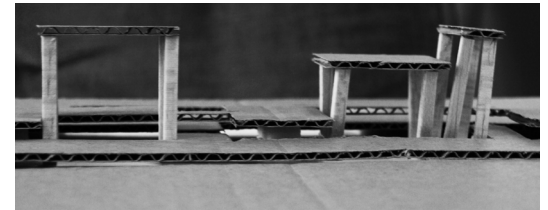
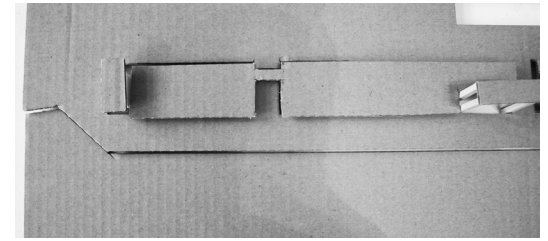
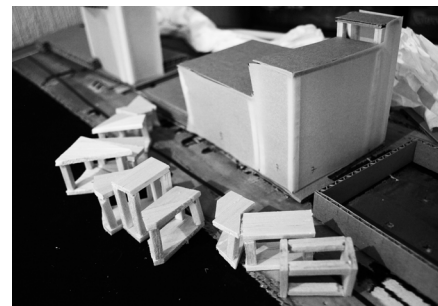
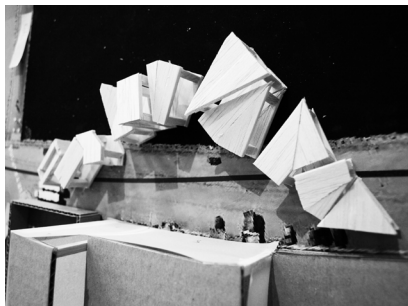
After multiple on site visits, literature studies and researching reference projects, the in studio sketching of the design proposal began. I worked with sketch models where I used maps, tracing paper, balsa wood, paper board, toothpicks, sticky notes etc. to try out ideas, concepts and forms. The models were later on photographed, digitalised and further developed in the computer.

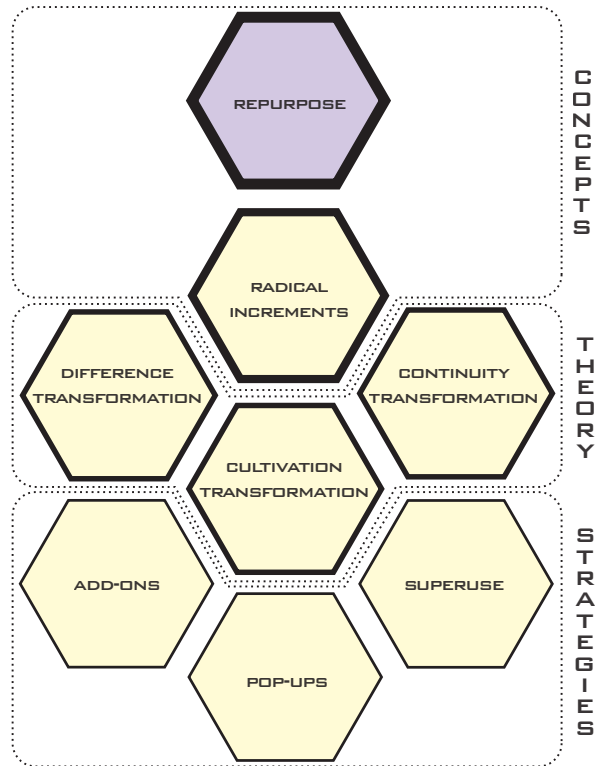
Now at the end of my project I've had the chance of revisiting the literature in order to understand and position the proposal and process. Since I haven't had a set program from the beginning of what the proposal

would comprise, and the projects design process has been open ended since the very beginning, the content grew with the form. The analysis methods has been given a lot of space and have had the chance of being quite intuitive. This way I believe the existing qualities of the site were better nurtured and respected than they would have been if it was the other way around.

The coming chapter of this thesis will explain the whole apparatus of concepts I've benefited from, such as *repurpose*, *radical increments*, *transformation*, *add-ons*, *superuse* and *pop-ups*.

CONTINUED WORK WITH BALSA WOOD IN THE 1:500 AND ANOTHER LEVEL MODEL IN 1:1000 FOCUSING MORE ON LANDSCAPE QUALITIES.





REPURPOSE

Fundamentally this project is about repurposing a place that is about to undergo a transformation from industrial harbour area to an urban, mixed city situation. Repurposing what is already existing is a flexible approach that takes care of on site qualities and takes existing stakeholders invested in the area into consideration.

To elaborate on the concepts of transformation and repurpose I've used Dana Cuff's & Roger Sherman's theories about *radical increments* and Ellen Braae's theories on *difference transformation*, *continuity transformation* and *cultivation transformation*.

To exemplify these theories I've used reference projects that are dealing with the strategies of *add-ons*, *superuse* and *pop-ups*, which are all closely connected to the design proposal of this thesis.

We'll begin with a citation about the concept of radical increments, originally coined by Cuff & Sherman but here quoted from Cuff's & Dahl's writing in *Housing in the River City: rethinking place and process* (2015):

RADICAL INCREMENTS

"To circumvent the battle between financially expedient demolition and insolvent restoration, architectural interventions can be added within and on top of existing structures to fuse the preservation of identities with the creation of new program."

[CUFF & DAHL 2015:38]

Dana Cuff and Roger Sherman deals with radical incrementalism in their book *Fast-forward urbanism: rethinking architecture's engagement with the city* [CUFF & SHERMAN 2011]. Radical increments is about developing new typologies that could set new standards or norms for architecture and urban design when solving problems connected to the contemporary city [CUFF & SHERMAN 2011:25]. One such problem could be the increasing housing costs which compels people to pay extortionate prices or not be able to find a place to stay at all, like the current situation in Stockholm for instance. Another could be today's large building

companies' routine buildings that does not adapt enough to existing qualities but rather apply a tabula rasa approach where the site's qualities often are neglected.

Cuff & Dahl continues elaborating the notion by stating that it's about making use of existing qualities and visualize new possibilities that are able to both preserve character and patina of a place and at the same time adding new layers of function and usage [CUFF & DAHL 2015:38].

"One way to generate such a radical increment is to project new possibilities from existing circumstances, whether those are cultural, economic, or environmental. [...] With such radical increments, the patina of cultural heritage adds originality to the global flow of tectonics and styles."

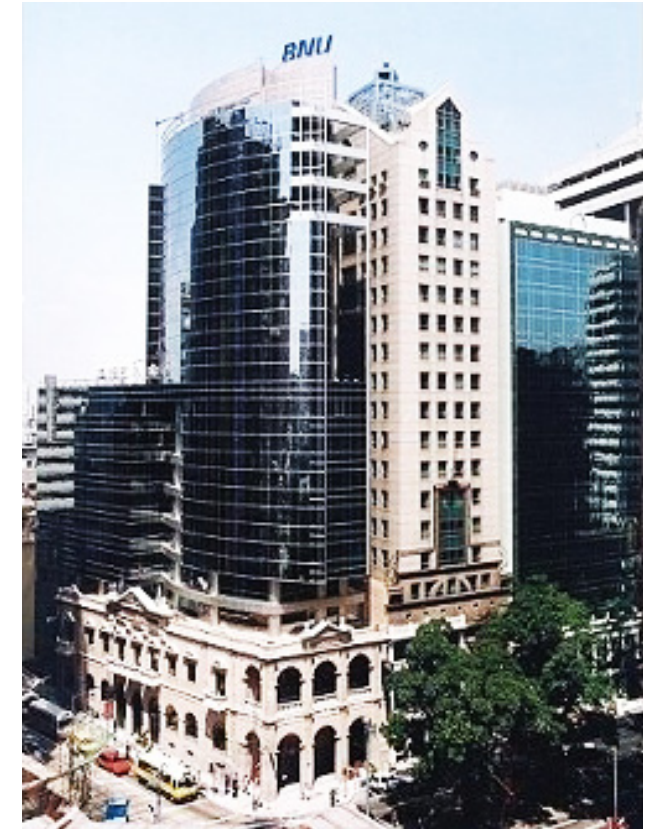
[CUFF & DAHL 2015:38]



LA FABRIQUE IN NANTES, FRANCE
BY TETRARC ARCHITECTS

IMAGE 45:1

IMAGE 45:1 - A box on a box that follows its precursor's footprint on the ground. It looks a bit like it has landed on top of the existing building and not really taken root yet. The addition though speaks a different material language than the already existing and does not try to mimic its visual expression.



EDIFICIO BNU GUITARRA PORTUGUESA
IN LISBON, PORTUGAL BY TOMÁS TAVEIRA

IMAGE 45:2

IMAGE 45:2 - Unlike la Fabrique's boxes the BNU does not follow its host building's footprint. Its visual aesthetics speaks a complete other language than the existing structure, almost like it wants to dissociate itself from the connotations of its precursor and rather join its neighbours around it. Here we can see different time layers accentuated and almost questioning each other.

TRANSFORMATION

To break down and make deeper analyses of the concept of radical increments I will now introduce Ellen Braae's theories on four kinds of transformation; *difference transformation*, *continuity transformation*, *cultivation transformation* and *optimisation transformation*. These four approaches are elaborated on in Braae's book *Beauty redeemed: recycling post-industrial landscapes* [BRAAE 2015].

The four paradigms of transformation - as Braae calls them - all relates to time in different ways.

DIFFERENCE TRANSFORMATION emphasizes the difference between the past and the present, making clear what is added and what existed before.

CONTINUITY TRANSFORMATION uses obsolete existing conditions to repurpose for new agendas, without clearly marking the engagement visually.

CULTIVATION TRANSFORMATION operates open-endedly from what exists here and now, without intentions of deliberately changing the future.

OPTIMISATION TRANSFORMATION is independent from the ravages of time, such as ideas of what things are, could and should be, in its pure essence.



I've chosen to elaborate further on difference, continuity and cultivation transformation, leaving optimisation transformation out of this thesis since I do not consider it relevant enough to my project.

Time and time's influence is of highest pertinence when dealing with a place such as Hullkajen, where I believe the visible layers of time should be clear, and at the same time functional and relevant to today's urban needs. Thus in this chapter I will immerse myself into difference transformation, continuity transformation and cultivation transformation, since these three are highly relevant and interesting as analysis tools for my theoretical investigations and design proposal.

DIFFERENCE TRANSFORMATION

Difference transformation addresses the contrast between what is new and what is old, what is added and what was existing. It's about accentuating what was at the site before a transformation, and what is being added now.

The two temporal conditions here are *now* and *before*, where one amplifies the others presence [BRAAE 2015:293]. Difference transformation deals with the accentuation of history by adding new layers of time to the old ones without removing the existing layers, but rather emphasizing the contrast to the already existing [BRAAE 2015:293].

Braae means that the contrasting layers does not consider how they will be perceived in the future when both layers are old, but merely accounts for the present situation where the new is visually, formally and/or materially distinguished from the old [BRAAE 2015:293]. Braae further discusses materiality and its relationship to time, and say that problems occur when the two layers of time no longer are clearly distinguishable

ADD-ONS

[BRAAE 2015:296]. The author means that the essence of difference transformation is lost when one cannot tell the old from the new. This can for instance occur when new materials ages faster than the older ones [BRAAE 2015:296].

CaixaForum in Madrid is a good example of a project where difference transformation has been a central ingredient [IMAGE 47:1-4]. The architectural office Herzog & de Meuron's project was realized between 2003-2008 and is located right next to Madrid's botanical gardens. The existing building was erected in 1899 and functioned originally as the Central Eléctrica Power Station. Within the transformation the brick shell of the building was retained while the base of building was removed [HERZOGDEMEURON.COM 11].

Additions are made both below and above ground level and within the existing structure [IMAGE 47:3]. By removing the base of the building, issues like narrowness of the surrounding streets and main entrance placement questions were all taken care of at ONCE [HERZOGDEMEURON.COM 11].

The most visually prominent add-on of CaixaForum is the rusty metal roof which bears the shape influenced by the surrounding building's roofscape, and were needed to expand the total volume for the building's interior activities.

The rust tells a story about rapid change due to time, in contrast to the older building beneath that ages more slowly. Unlike the BNU building in Lisbon [IMAGE 45:2], the footprints of the existing building is scrupulously followed at CaixaForum.



PRE-TRANSFORMATION, CAIXAFORUM IN MADRID, SPAIN BY HERZOG & DE MEURON

IMAGE 47:1



ELEVATED GROUND LEVEL FACING NEW SQUARE

IMAGE 47:2



IMAGE 47:3



POST TRANSFORMATION

IMAGE 47:4

That the project is a transformation of an old building is clearly visible, but the traces that the previous function of the building was an electrical power plant is no longer visually obvious.

Another project made by Herzog & de Meuron that is interesting from a difference transformation point of view is the Elbphilharmonie in Hamburg, which is currently under construction [IMAGE 48:1 & 48:2]. This project consists of a former warehouse in the harbour of Hamburg that is being turned into a concert hall that is extending 110 meters above ground [HERZOGDEMEURON.COM 2].

Like La Fabrique in Nantes [IMAGE 45:1] and CaixaForum in Madrid [IMAGE 47:1-4], the Elbphilharmonie wears the shape of the existing building beneath. It does not try to imitate the visual language of the surrounding buildings but rather merges with the surrounding sky and water through reflections, than conduct a conversation with the industrial harbour context.

The added layer is visually hard to miss. Its very different materiality will accentuate the distinction of contrasting layers of time for a long time I believe. Even whilst the add-on ages, the two parts of the structure and their difference in time won't be hard to tell one from the other. Maybe it would even be possible to remove one of the layers and keep the other one, regardless if it's

the newer addition that is removed or if it's the older foundation that becomes obsolete.

Difference transformation will be an inevitable ingredient in the transformation of Nyhamnen if not a complete tabula rasa approach is conducted. Existing buildings are already today being used by new businesses that probably will stay in the area in the future.



IMAGE 48:1

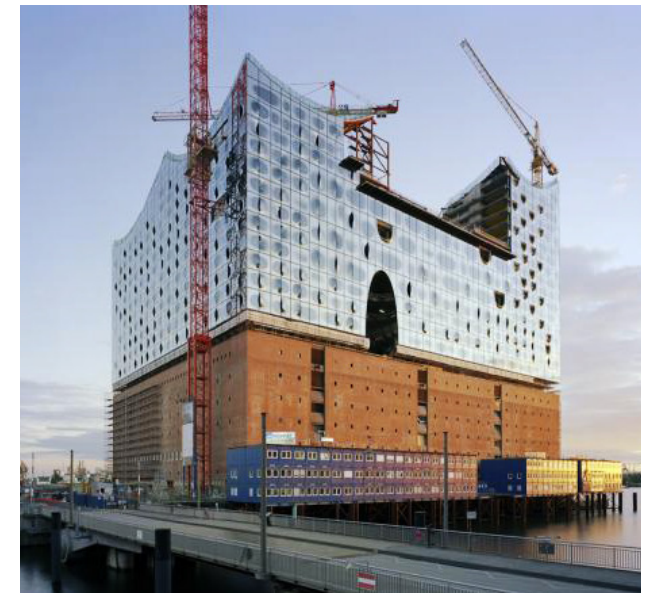


IMAGE 48:2

A difference transformation in the design proposal of this thesis is that the three industrial building blocks are not removed but kept in their present external state. The patina they've accumulated cannot be mimicked.

The new layers of structures do not try to imitate an industrial sense, they are a new addition to an old context. At Hullkajen I've used radical increments in a wider sense than within one building, through adding new layers and structures to the already existing ones, making use of and enhancing their qualities. The difference is that this project works at a larger scale than for instance CaixaForum in Madrid and the Elbphilharmonie in Hamburg. Hullkajen includes several existing buildings, outdoor space, a quay and a basin. The added structure is cohesive and connects to all of these parts.

At a large scale the proposal also accentuates axial differences, where the existing structures' significance lies in their vertical configuration, while the added structure's configuration is essentially horizontal. This axial difference should be quite obvious when approaching Hullkajen at a distance. While the existing

structures pride themselves with their standalone size and height, the added structures together form a lower continuous body, that within a smaller scale becomes more entangled and detailed.

In contrast to both CaixaForum and Elbphilharmonie which both extrude vertically directly from existing buildings' ground plans, this proposal's add-ons land at the side of the existing buildings and are connected mainly horizontally. Where Herzog & de Meuron's examples create monolithic structures that mostly have visual engagements with their surroundings - i.e. shape of the surrounding roofscape or reflections of sky and water - this proposal embraces the surrounding landscape context and connects more tangibly and physically through jetties and bridges, walking paths and board walks.

To consolidate the contrasts at a smaller scale, the noticeable accentuations of the additions are found through colours and materiality of the added structures. The existing materials at Hullkajen are quite varying with everything from red concrete, yellow bricks and pale green plaster to green metal, tin roofs and asphalt.

A material that is not very frequent at Hullkajen today is wood, which is to be used for the floating walking paths and elevated paths.

CONTINUITY TRANSFORMATION

Continuity transformation deals with the reprogramming of existing structures, where changes of function strengthen their place and usability [BRAAE 2015:293].

"Any project wishing to extend the past into the future involves both preservation and re-creation and is founded on appreciating the value of what already exists."

[BRAAE 2015:297]

Compared to difference transformation, where time is encapsulated into two states - now and before - continuity transformation picks up something existing and transform it to suit both present and future needs.

The parameters that are desirable to pass on can be both material qualities and existing processes that should be transferred into the future [BRAAE 2015:297]. If the author of a difference transformation often is clearly visible, since the gap between now and before is clearly visible, the author of a continuity transformation is subtler, and rather noticeable conceptually or in the detailing [BRAAE 2015:297]. Thus the wish in difference transformation to distinguish the added from the existing doesn't really apply in the same way to continuity transformation. Or as Braae puts it:

"[...] they [continuity transformations] open up a large interval of time in which architects' and time's effects on materials can be decoded, interpreted and worked on through extensions, additions, comments and gliding changes."

[BRAAE 2015:297]

SUPERUSE

The concept of superuse is coined and further developed by the office 2012 Architecten. Superuse is about reducing transportation costs and energy expenses in breaking down and remaking materials, by using materials that is already existing at the site [AWAN, SCHNEIDER & TILL 2011:87].

It can be viewed as an extensive form of recycling, but which is even more focused on energy optimisation. Instead of remoulding or recycling, components and materials are used in the way they are found [AWAN, SCHNEIDER & TILL 2011:88].

WIKADO PLAYGROUND IN ROTTERDAM, THE NETHERLANDS BY 2012 ARCHITECTEN, MADE FROM DISCARDED WIND TURBINE BLADES.



IMAGE 50:1

There are many similarities between superuse and Braae's notion of continuity transformation, where the past and present is given new meaning and programming through reuse and repurpose.

Two of the founders of 2012 Architecten formed in 1997 *Superuse Studios*, which is working towards the aim of making "effective use of frequently wasted resources and energy" [SUPERUSE-STUDIOS.COM]. Superuse Studios is proposing a new profession called *superuse scout*. This scout would be an expert in finding, mapping and distributing reusable potential of materials, objects and components [AWAN, SCHNEIDER & TILL 2011:88].

"At the start of each project, 2012 Architecten carry out an assessment of the waste and productive cycles that a given situation is part of, including food, water, traffic, humans, energy etc.

This research informs

the design process, including an overall strategy for acquiring materials, making use of competencies and skills in the locality, and finally in the design of buildings and other interventions."

[AWAN, SCHNEIDER & TILL 2011:88]

CAFE AT DELFT SCHOOL OF ARCHITECTURE IN THE NETHERLANDS BY 2012 ARCHITECTEN. A SCHOOL CAFE MADE FROM DISCARDED WINDOWS.



IMAGE 51:1

These examples - the playground in Rotterdam [IMAGE 50:11], the cafe in Delft [IMAGE 51:1] and the pavilion in Dordrecht [IMAGE 51:2] - from Superuse Studios are all examples of how objects and materials can be used

RECYCLOOP IN DORDRECHT, THE NETHERLANDS BY 2012 ARCHITECTEN. A BRICOLAGE PAVILION MADE OUT OF KITCHEN SINKS.



IMAGE 51:2

in unconventional, but though satisfactory and clever ways.

The pavilion [IMAGE 51:2] is more of a political statement than the other two, showing both the society and the field what can be done with existing means in a playful and exhibitionistic way.

The playground on the other hand [IMAGE 50:1] is purely functional in its configuration, but as I believe quite much more intriguing and exciting for play than standard designed playgrounds often are. And when using material found on site, every playground will be different from the other, and be carrying locally rooted memories and associations.

The window cafe [IMAGE 51:1] is more of a mix of the demonstrational and the functional since it's constructed in a school of architecture and thus meant to evoke ideas and inspiration, and at the same time function as a cafe.

Since there are many structures and buildings in Nyhamnen that either are in too bad condition to stay in their present state or needs to be relocated or removed, I believe the superuse mind set can come very handy if sustainability and preservation of identity are desired concepts in the transformation of Nyhamnen.

The reprogramming of the existing buildings along Hullkajen has already began from the western end with the transformation of the building *Korallen 1* [IMAGE 52:1 & 15:1]. This is a former salt import building that is now housing a flower shop, design businesses, helmet manufacturer, restaurant, cafe etc. If one sees this building for the first time after the transformation it is very hard to see how it was programmed before, unlike the approach of a difference transformation.

The reprogramming and continuity transformation of this proposal continues along Hullkajen eastwards with the large structures that today are used for grain storage. These large buildings with robust frameworks are able to hold many functions needed in the forthcoming urbanisation of Nyhamnen.

Superuse has been a beacon throughout the process in this project but is not particularly visible in the final design proposal. This would be something to continue working with in the next step of concretisation of this proposal. Superuse scouting would then be a way to map what exist and can be used and reprogrammed within the area of Nyhamnen in a continuity transformational kind of way without wasting a lot of resources on transportation and dissolving of materials.



IMAGE 52:1

CULTIVATION TRANSFORMATION

Cultivation transformation's most important building material is time [BRAAE 2015:300]. Where difference transformation accentuates the layers of time; and continuity transformation deal with reprogramming of the already existing; cultivation transformation nurtures the here-and-now, regardless of what will follow in the future. Thus cultivation transformation is very dependent on both the qualities on site today and what has been there in the past, and is - in contrast to continuity transformation - an open ended process, where today's situation is the point of departure for tomorrow's situation [BRAAE 2015:301 & 293].

"Its [cultivation transformation's] actions weave themselves into the objects acted upon, assuming the nature of amalgamations and constant mutations, which may be allowed to develop in as yet unknown and unpredictable directions."

[BRAAE 2015:293]

POP-UPS

A strategy that fit in under both difference's and continuity transformation's roofs, but maybe even better within the cultivation transformations is the one of *pop-ups*. I would define pop-ups as temporary spatial interventions that can be more experimental than conventional architecture, and often without larger financial risk-taking. They can be ephemeral and disappear without trace, they can grow quickly in numbers during periods but then slowly decay, they can steadily appear at the same spot year after year, or they can take root and be institutionalised in something more permanent.

RIBA (The Royal Institute of British Architects) define pop-ups as a little bit braver kind of architecture that "range from very functional buildings to those that are designed to provoke, amaze and astonish" [ARCHITECTURE.COM].

Pop-ups occurrence can be hard to predict, can take advantage of unexpected and unplanned opportunities and are able to test things spatially in explorative ways. They can accentuate the difference between the fixed and the perishable, momentary experimenting with what could be done in the longer run.

A POP-UP ICE CREAM SHOP IN BRYANT PARK, NEW YORK



IMAGE 53:1

A TEMPORARY REFUGEE CENTRE IN MALMÖ, SWEDEN



IMAGE 53:2

Pop-ups can occur on a seasonal basis, such as an ice cream stand in the summer **IMAGE 53:11**, or when the need is big enough, such as when a temporary refugee centre was set up near Malmö Central Station **IMAGE 53:21**.

A pop-up can also make use of a space that is about to turn into something else, like this movable fence and tree nursery in New York, where space that is going to

A MOVEABLE SCULPTURAL FENCE & A TREE NURSERY IN NEW YORK BY LENTSPACE.



IMAGE 54:1

be exploited is used for resting, socializing and growing trees that later will be distributed in the surrounding area **IMAGE 54:11**.

In South Bank, London two restaurants made out of shipping containers popped up during the festival season, the smaller Yalla Yalla with its open-air seating **IMAGE 54:21**, and the larger Wahaca composed by eight stacked containers **IMAGE 54:31**.

In Nyhamnen this kind of container pop-ups would allude to a history of harbour activities, and be a kind of continuity transformation that take something from the past, reprogram it and pass it on into the future. In their context in London on the other hand, the containers stand out from the quite modern large concrete buildings around them in a more difference transformational kind of way. It's like the newly added layer is from a time prior than at present day, a reversed kind of difference transformation where the history is accentuated in the add-ons.



BEIRUT STREET FOOD AT YALLA YALLA IN LONDON, UNITED KINGDOM **IMAGE 54:2**

MEXICAN MARKET FOOD AT WAHACA IN LONDON, UNITED KINGDOM

IMAGE 54:3



But the pop-ups are still pop-ups. They occur because the conditions are right and make it possible, and does not intend to predict what the future will hold. They are though an addition that coming events will take into consideration, and make their mark in a temporal cultivation transformative kind of way.

Pop-ups can accentuate the difference between the fixed and the perishable in time, meaning at Hullkajen the difference between the rigid existing harbour buildings and quay, and the smaller flexible injections in forms of pop-up stands and other temporary constructions. I see three major opportunities for pop-ups to occur at Hullkajen;

The first is now when the design proposal is not built yet. Pop-ups can activate the space initially when the crop industry has left the buildings. They will function as injections to try out ideas about what can and should exist ahead at Hullkajen;

The second and recurrent opportunities are when the water does not cover the quay surface *ground level* of Hullkajen. Since this area will be flooded from time to time, pop-ups could be what inhabited that space when possible;

The third kind are the houseboats that are supposed to populate the quay and board walk. They can already start popping up along the quay, and be moved around during the constructions at Hullkajen.

All three kinds of these pop-ups could provide everything from food and other businesses to seating and activities. They can both be superused containers or other material left from the harbour era or newly built constructions.

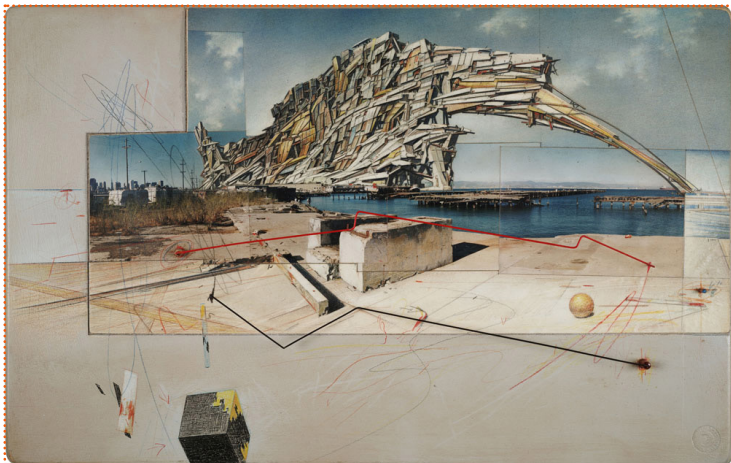


IMAGE 56:1

LEBBEUS WOODS

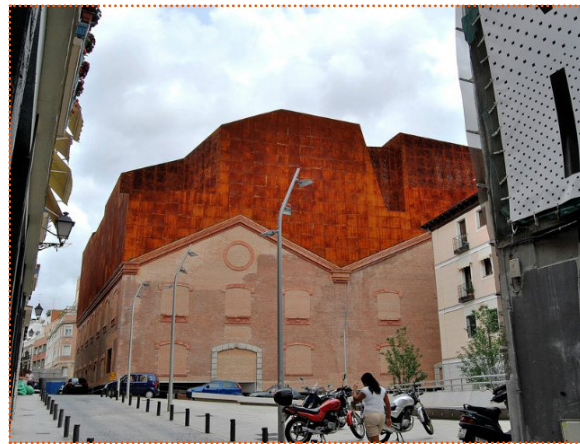


IMAGE 56:2

HERZOG & DE MEURON



IMAGE 56:3

TETRARC



IMAGE 56:4

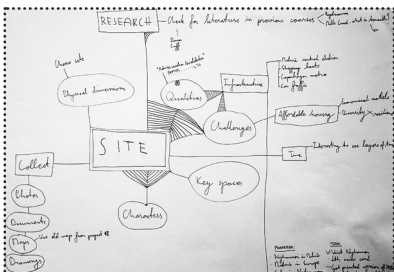
ALEXANDRE CHEMETOFF

PROCESS DIAGRAM SHOWING THE WORK OF THIS THESIS FROM INITIATION TO RESULT. THE ABOVE ROW CONTAINS SOURCES OF INSPIRATION AND THE BELOW MY OWN DESIGN PROCESS, BOTH CHRONOLOGICALLY CONNECTED TO KEYWORDS IN THE ARROW.

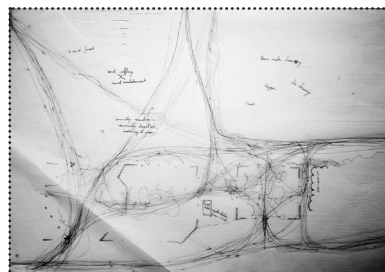
RADICAL RECONSTRUCTION

ARCHITECTURAL ADD-ONS

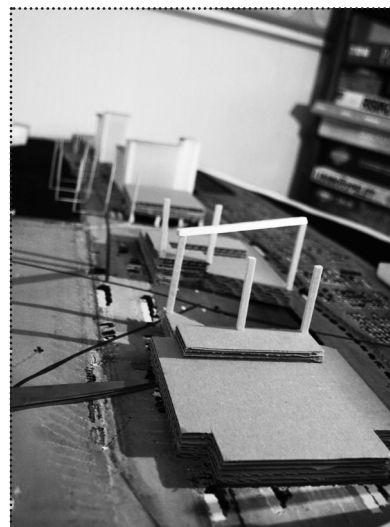
PLAN GUIDE



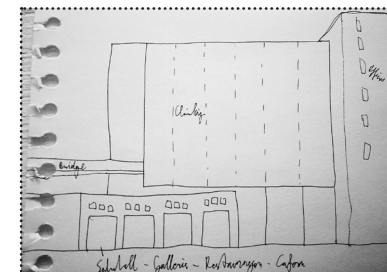
INITIAL MIND MAPS



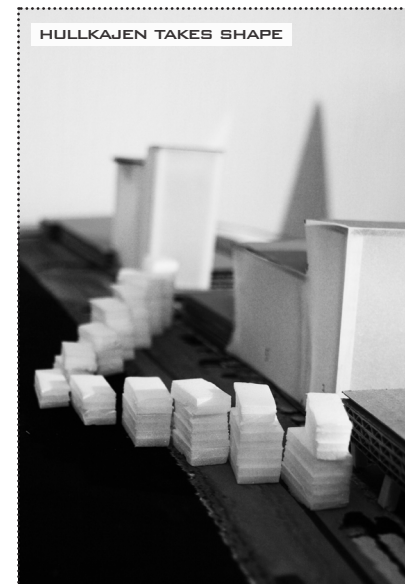
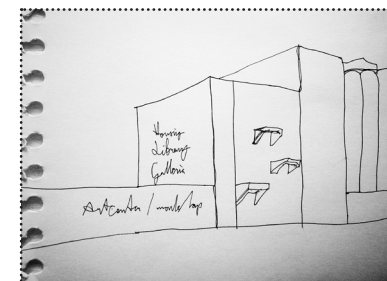
FIRST OUTLINING SKETCHES AND IDEAS



AN IN STUDIO MODEL WORKSHOP



ON SITE SKETCHES



HULLKAJEN TAKES SHAPE

Fast-Forward Urbanism

Rethinking Architecture's
Engagement with the City

Dana Cuff and Roger Sherman, editors



IMAGE 57:1

DANA CUFF

ROGER SHERMAN

PER-JOHAN DAHL

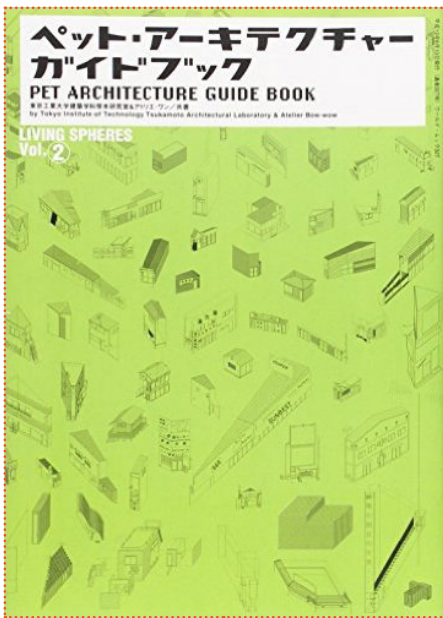


IMAGE 57:2

ATELIER BOW-WOW



IMAGE 57:3

ARCHIGRAM



IMAGE 57:4

MUF

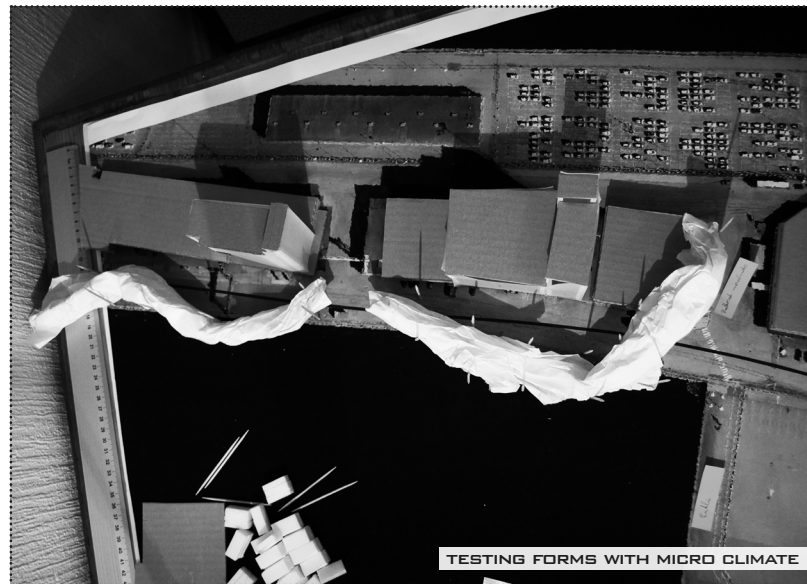
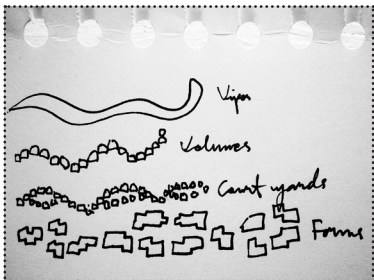
RADICAL INCREMENTS

PET ARCHITECTURE

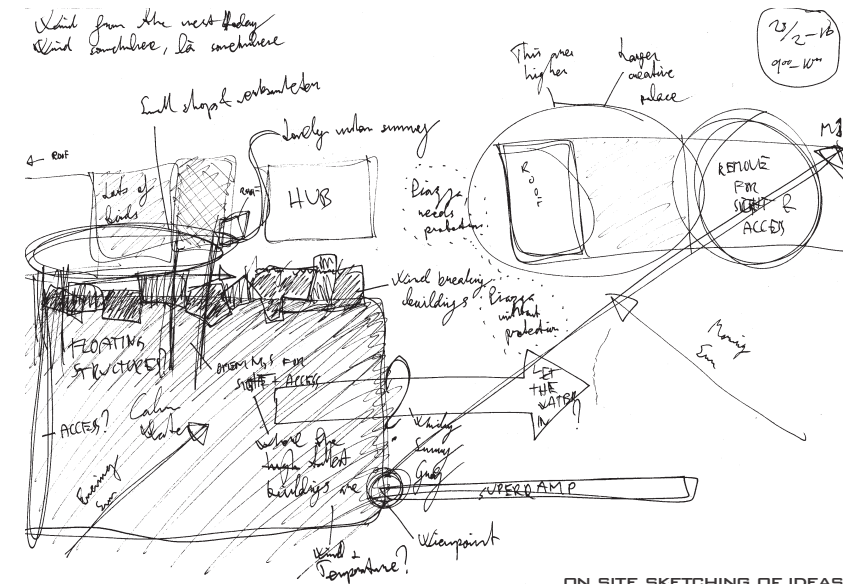
POP-UP ARCHITECTURE



CONCEPTUAL DIAGRAMS



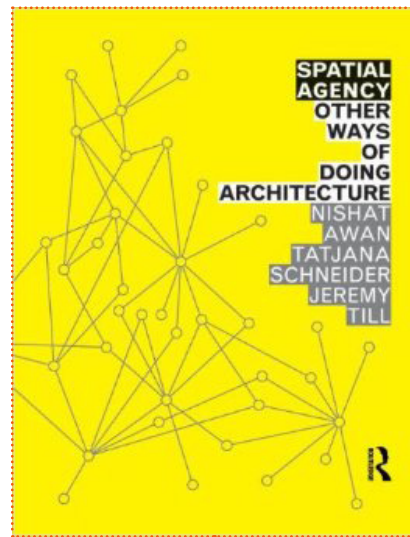
TESTING FORMS WITH MICRO CLIMATE



ON SITE SKETCHING OF IDEAS



RAHEL BELATCHEW



NISHAT: AWAN

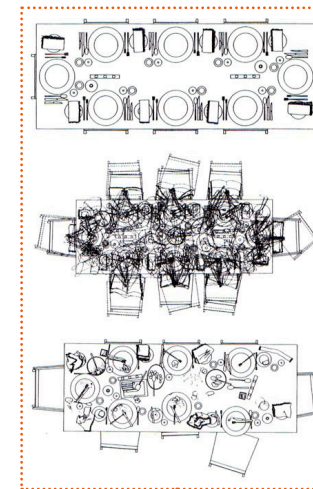
TATJANA SCHNEIDER

JEREMY TILL

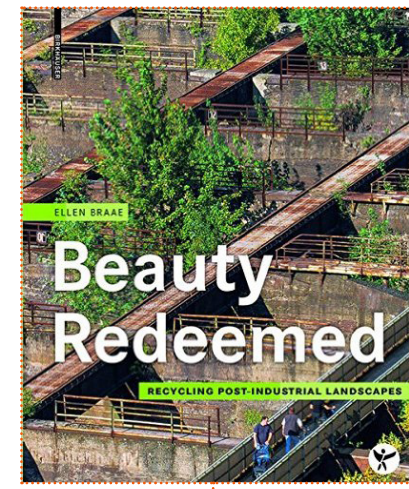


2012 ARCHITECTEN

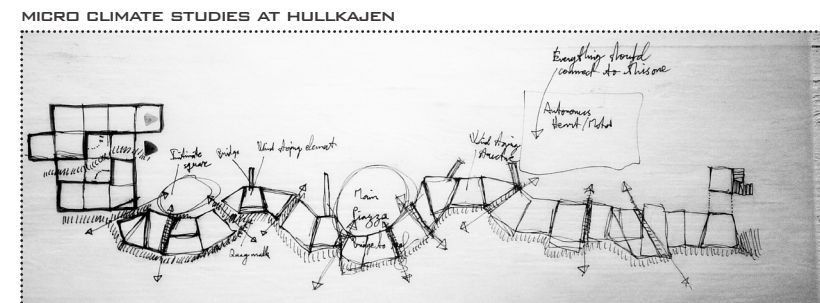
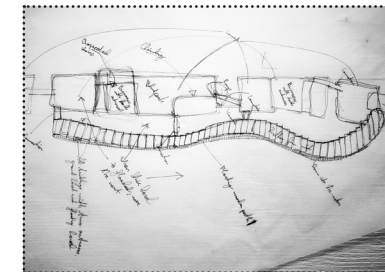
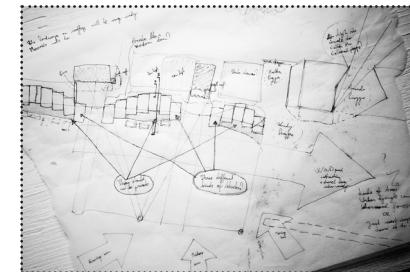
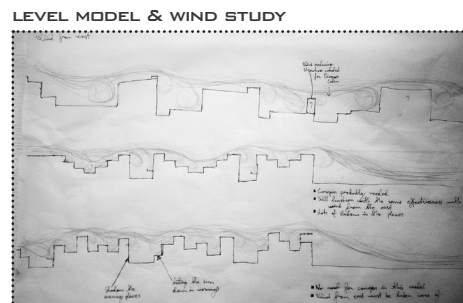
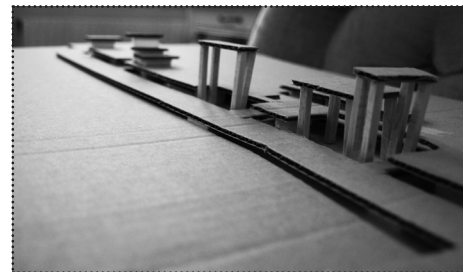
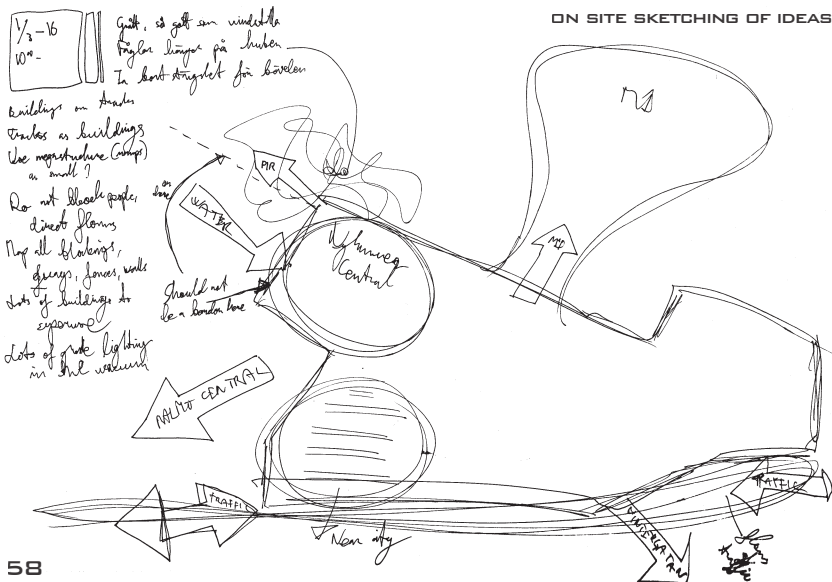
SUPERUSE STUDIOS



SARAH WIGGLESWORTH



ELLEN BRAAE





LAWRENCE HALPRIN

IMAGE 59:1



CONSTANT NIEUWENHUIJS

IMAGE 59:2



IMAGE 59:3



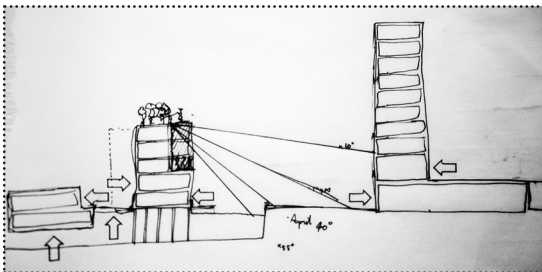
FRIEDENSREICH HUNDERTWASSER

IMAGE 59:4

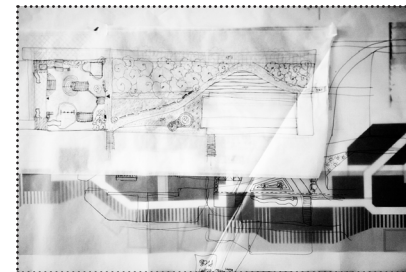
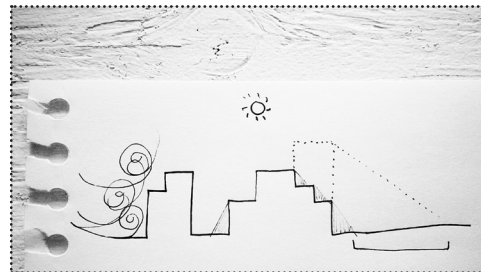
TRANSFORMATION

SYSTEM

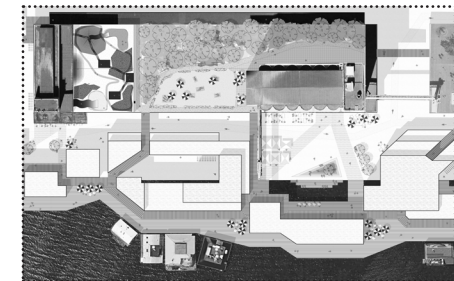
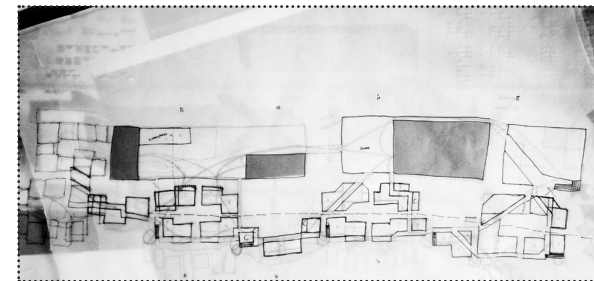
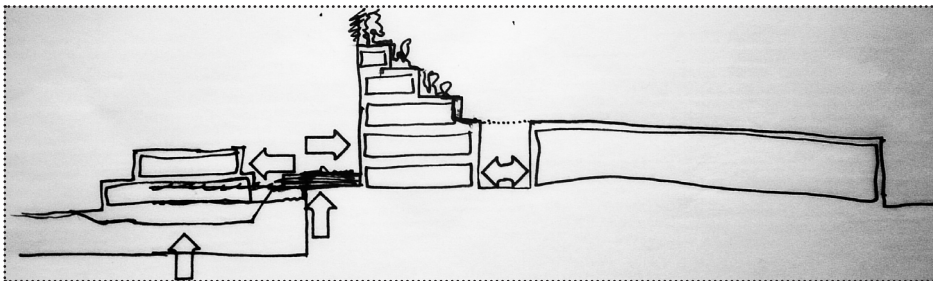
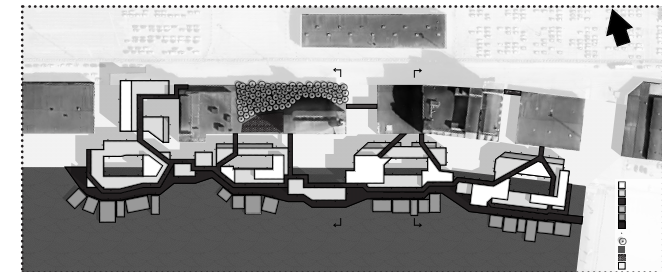
SURFACE



SECTIONS TESTING SUN ANGLES AND ACCESSIBILITY

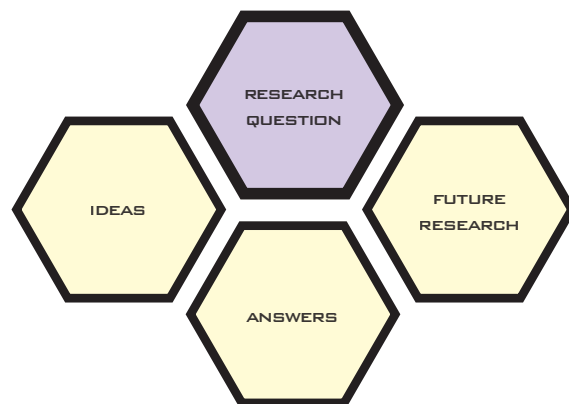


EMERGING OF FINAL PROPOSITION



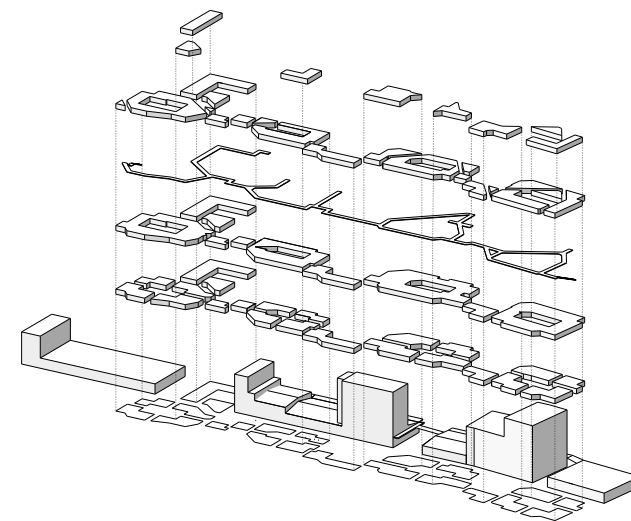
CONCLUSION

HOW CAN THE BUILT ENVIRONMENT
IN AN URBAN SEAFRONT CONTEXT
BE ADAPTED TO COPE WITH
SEA LEVEL RISE WHILE STILL
PROVIDING OPPORTUNITIES FOR
REDEVELOPMENT?



I really believe the multi layeredness could be a key instrument to this particular situation in Nyhamnen. Water is everywhere; it's in the ground around us, it fills our own bodies, it's in liquid form in the basin, it's in gaseous form as moist in the air and it falls down as droplets from the sky. Water is vital for life on earth and is an endless source of energy. Thus we should not work against it, but rather embrace it and make use of its strengths and benefits.

By using existing levels and adding new layers, an arena for handling different scenarios is created. I have treated the site as a four dimensional landscape, where the fourth dimension refers to movement and temporal



changes. The normal water level is slowly rising *linearly* due to melting glaciers and global warming. On top of the linear increase the *cyclic* fluctuations are pulling their weight over seasons and months. When these two are combined with *occasional* floods such as storms and pressures from other seas the ground level of the landscape is challenged and we will need other layers to rely on. Both humans and water need to continue their movement simultaneously without the one interrupting the other. If humans try to master the forces of the water something will eventually break. The same thing goes for if the water stops the movement of the humans.

To enable for these movements to co-exist I believe both flexible and fixed structures are needed. This proposal comprises a spectra of different temporalities within structures with everything from very flexible houseboats and pop-ups, to the fixed old structures of the harbour and to the new added layers.

No matter how much we exploit the ground, we will still have the same surface area as before. Thus to construct buildings does not have to be a contradiction to space for parks and open public spaces. The surface just switches altitude. This could especially be useful in cities like Malmö, where most of the buildings in the dense down town city area are of the same height. If we would deviate from pitched roofs and isolated entities we could have enormous amounts of space with direct sun light, great views etc. We just need to connect the build structures to one another to form a common whole, and perform structural adjustments to handle new loads where necessary. This project at Hullkajen is a test of just that, a test where the ground level is extruded into different interconnected layers.

Through merging existing identity with new additions I believe numerous qualities and opportunities are to be gained. The harbour of Malmö has a rich history with a large impact on the citizens of Malmö's collective memory. By keeping some of these qualities, by reprogramming them and densifying the built environment by adding new structures I believe the area will have a solid base to restart from in the future development of the area. Nyhamnen's annual rings could then be visible through the contrasts between the different layers of time.

Other important factors that this proposal has taken into consideration are the deployment of micro climate analyses regarding sun and wind. These design principles have consistently been taken into account throughout the design process and have probably been my most influential tools. This due to the attempt of grasping the atmospheric qualities on site and keeping and enhancing them side by side with large new constructions. The 1:1-scale is what matters on site and that's where micro climate aspects meet atmospheric conditions in this proposal.

This project can be seen as a point of departure, an initiator where Nyhamnen takes off in its forthcoming transformation. The city is an organism, a living system and it will grow by itself in directions we cannot predict. This injection at Hullkajen is a pilot, or maybe an embryo for a future multi layered Nyhamnen, where conventional planning does not have its superordinate position as today. I see possibilities to draw the outlines, and setting the framework for smaller firms that can develop pieces of the larger structures that together creates a whole, rather than a few large firms that constructs isolated entities.

This proposal lifts the focus from the ground to create a system that functions also during floods and other difficult weathers. Its site-specificity I believe is a strength within the design proposal, but could be a weakness in its replicability. Some parts can probably be modified and changed to fit other contexts, but the main aspect to bring to other situations are the concepts, theories and strategies.

REFLECTIONS

In hindsight I wish I've had the opportunity, or just prioritized to spend even more time on site. Maybe even put up a small camp where I could work, or get a small space to work in one of the existing offices at Hullkajen. Grasping the essences of a place is only reachable on site. The atmosphere I've picked up on site at Hullkajen is that it's hard, welcoming, warm, cold, windy, deserted, unexpected, noisy, moving, free, but the list would probably be a lot longer if I would have spent more time there. An issue with this site is that there are no dwellers there at the moment. The smells and noises from the industries will not be present at a future Hullkajen. Visual and tangible traces will be left but the scents and sounds of rattling seeds will not be the same.

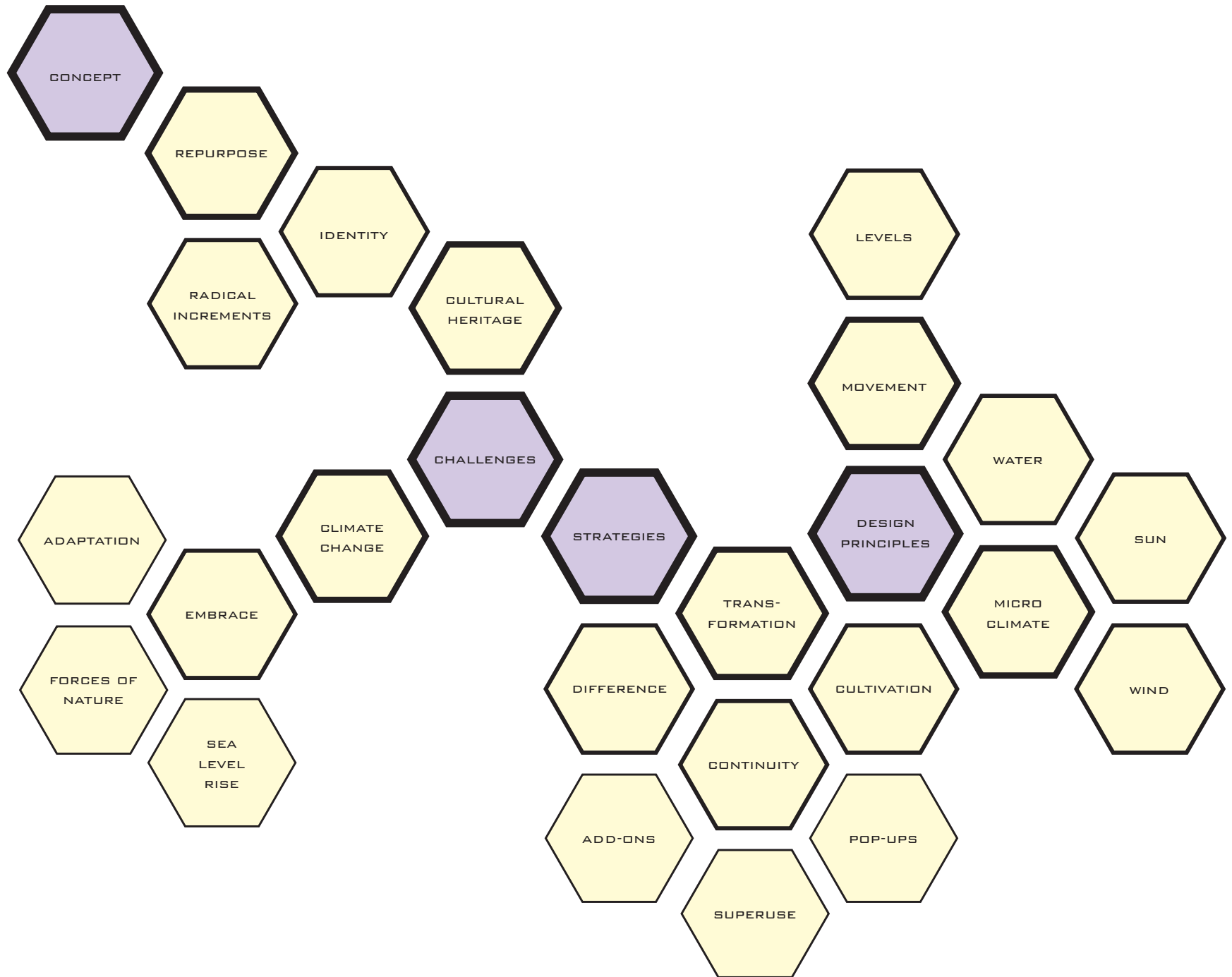
The next step in this process, which I would really be interested in doing myself, or see someone else continue where I leave off, would be to start solving

constructional and material detailing. And to act as a superuse scout and produce a reusability assessment plan for the project, where Malmö in general and Nyhamnen in particular would be mapped for materials and objects to work further with.

Alongside superuse scouting I would really be interested in future research about the forming of a frameworks for how joint building ventures could be implemented in the development of Hullkajen. And if three-dimensional property division could be a way to make even more use of Hullkajen's multi layeredness.

Caroline Dahl: Thank you for your always insightful comments, your source of references and inspiration and your ability to put words on thoughts otherwise to hard to grasp.

Markus Hölbling



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IMAGES:

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